



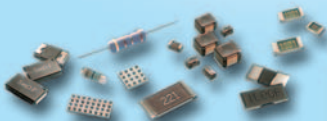
TECHNOLOGY OF TOWORROW

NETWORKS

Neue Generation von integrierten passiven Netzwerk- Komponenten – KPC



- Widerstandswertebereich von 10 Ohm bis 1 MOhm
- Toleranzen von $\pm 5\%$ bis $\pm 0.1\%$
- Temperaturkoeffizient von 100 ppm/K bis hinunter zu 10 ppm/K
- Kapazitätswerte von 22 pF bis 250 pF
- geeignet für Laptops, Speicher- und Filteranwendungen (EMI/RFI)

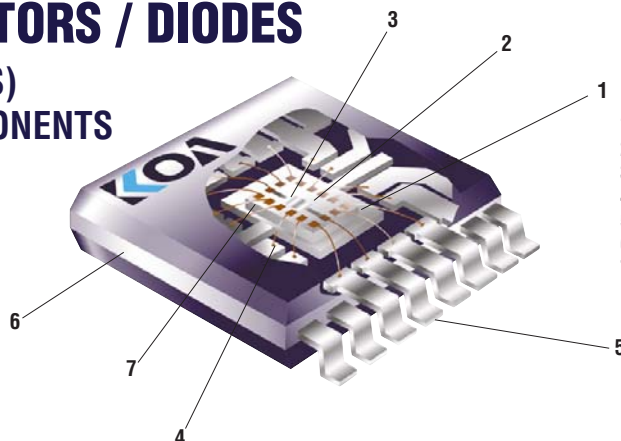


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RESISTORS / CAPACITORS / DIODES

THIN FILM ON SILICON (TFOS) INTEGRATED PASSIVE COMPONENTS KPC



STRUCTURE

- 1 Die pad
- 2 Silicon substrate
- 3 Circuit
- 4 Bonding pad
- 5 Lead
- 6 Mold resin
- 7 Gold wire bonding



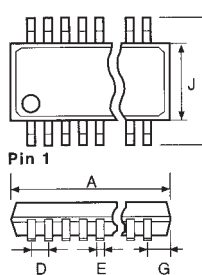
IDENTIFICATION

TYPE	COATING COLOR	MARKING
KPC	Black	White Ink or Laser

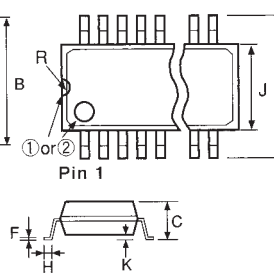
FEATURES

- Excellent performance and reliability due to thin film on silicon wafer technology and molded construction
- Wide variations of standard packages like TSSOP, QSOP, SOIC, SOT
- Excellent resistance matching, TCR tracking and stability characteristics
- Fields of applications are EMI/RFI filtering, low pass filtering, computers and peripherals, automotives, analog instrumentations, IC testers, terminations, Pull-up/Pull-down
- High integration saves board space and reduces overall assembly costs
- Meets or exceeds IEC 60115-1, JIS C 5201-1
- Suitable for reflow soldering
- Customer specific circuits on request

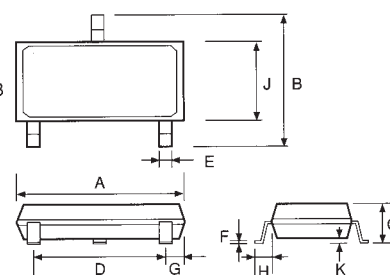
TSSOP, QSOP, SOIC-N



SOIC-W



SOT-23



DIMENSIONS (mm)

PACKAGE SYMBOL	PACKAGE	NUMBER OF PINS	A ± 0.2	B ± 0.2	C ± 0.2	D ± 0.1	E ± 0.1	F ± 0.1	G ± 0.1	H ± 0.2	J ± 0.2	K ± 0.1	R ± 0.2	TAPING Q'TY/REEL (pcs)
T16	TSSOP	16	5.00	6.40	1.00	0.65	0.25	0.20	0.23	0.66	4.40	0.18	-	2,500
T20		20	6.50						0.33					
T24		24	7.80						0.20					
Q16	QSOP	16	4.90	5.99	1.60	0.635	0.41	0.23	0.20	0.66	3.81	0.18	-	2,500
Q20		20	8.66						1.47					
Q24		24	8.66						0.84					
N08	SOIC-N	8	4.83	10.36	2.40	1.27	0.44	0.13	0.52	0.53	1.30	0.11	-	3,000
N14		14	8.66						0.76					
N16		16	9.91						0.64					
W16	SOIC-W	16	10.44	2.30	0.95	1.91	0.44	0.13	0.76	0.53	1.30	0.11	-	3,000
W20		20	12.70						0.64					
S03	SOT-23	3	2.92	2.30	0.95	1.91	0.44	0.13	0.51	0.53	1.30	0.11	-	3,000

GENERAL RATINGS FOR R- AND RC-NETWORKS

		PACKAGE / PIN COUNT											
		TSSOP			QSOP			SOIC				SOT23	
		T16	T20	T24	Q16	Q20	Q24	N08	N14	N16	W16	W20	S03
PACKAGE POWER RATING		0.8 W	1.0 W	1.0 W	0.8 W	1.0 W	1.0 W	0.4 W	0.6 W	0.8 W	1.0 W	1.2 W	0.1 W
RESISTANCE	10 Ω ~ 1 kΩ	Power Rating 200 mW / Resistor Element*											
RANGE	R ≥ 1.1 kΩ	Power Rating 50 mW / Resistor Element*											
MAX. WORKING VOLTAGE		100 V											
RATED AMBIENT TEMP.		+ 70° C											
OPERATING TEMP. RANGE		− 40° C ... + 125° C											

Above ratings are based on the thermal resistances using a multi-layer circuit board (EIA / JESD51). For mounting on a mono-layer board, power derating shall be needed. Please inquire of us about conditions.

* Total power consumption of all elements should not exceed the package power rating.

RESISTORS, THIN FILM ON SILICON (TFOS) INTEGRATED PASSIVE COMPONENTS

RESISTOR NETWORKS

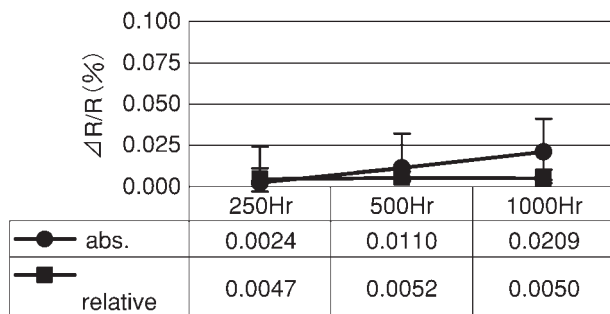
CIRCUIT CODE	CIRCUIT SCHEMATICS	NUMBER OF PINS	T.C.R. (ppm/K)	RESISTANCE RANGE (E24) AND ABSOLUTE TOLERANCE				
				B (±0.1%)	C (±0.25%)	D (±0.5%)	F (±1%)	G (±2%), J (±5%)
RIA*		8, 14, 16 20, 24	T (±10)	510Ω ... 100 kΩ	510Ω ... 100 kΩ	510Ω...100kΩ	510Ω...100kΩ	510Ω...100kΩ
			E (±25)			100Ω...510kΩ	100Ω... 510kΩ	100Ω... 510kΩ
			C (±50)			51Ω...1MΩ	51Ω...1MΩ	51Ω... 1MΩ
			H (±100)			30Ω... 1MΩ	30Ω... 1MΩ	10Ω...1MΩ
RBA		8, 14, 16 20, 24	T (±10)	510Ω ... 30kΩ	510Ω... 30kΩ	1kΩ...30kΩ	1kΩ...30kΩ	1kΩ...30kΩ
			E (±25)			100Ω...100kΩ	100Ω...100kΩ	100Ω...100kΩ
			C (±50)			51Ω... 200kΩ	51Ω...200kΩ	51Ω... 200kΩ
			H (±100)			30Ω...200kΩ	30Ω...200kΩ	10Ω...200kΩ
RTY		3 SOT-23 Only	T (±10)	1kΩ ... 40kΩ	1kΩ ... 40kΩ	1kΩ...40kΩ	1kΩ...40kΩ	1kΩ...40kΩ
			E (±25)			100Ω...150kΩ	100Ω...150kΩ	100Ω...150kΩ
			C (±50)			51Ω...200kΩ	51Ω...200kΩ	51Ω...200kΩ
			H (±100)			30Ω...200kΩ	30Ω...200kΩ	30Ω...200kΩ
RDA		16, 20	E (±25)	—	—	—	—	R1=150Ω...10kΩ R1: R2=1:1...1:4
			C (±50)					
			H (±100)					
RTX		3 SOT-23 Only	E (±25)	—	—	—	100Ω...40kΩ	100Ω...40kΩ
			C (±50)				51Ω...50kΩ	51Ω...50kΩ
			H (±100)					
RNX			Please contact KOA about your custom devices and circuits. (Different resistance combination available) Depending on the circuit and package, much higher resistances are possible.					

*For RIA 20, 24 pin, 200 k Ω is the highest resistance.
Relative Resistance Tolerance (Optional) : Minimum 0.05%
Relative T.C.R. (Optional) : Minimum 5 ppm/K

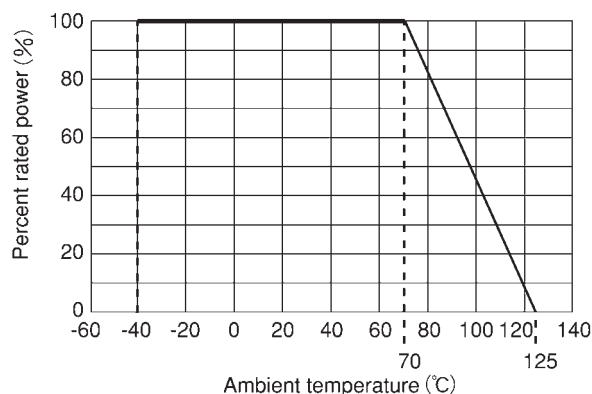
Specifications given herein may be changed at any time without prior notice.
Please confirm technical specifications before you order and/or use.

TYPICAL CHARACTERISTICS

Rated Load at 70°C (Typical: 1k Ω , 8 resistors/package)



DERATING CURVE



For resistors operated at an ambient temperature of +70°C or above, the power rating shall be derated in accordance with the above derating curve.

RESISTORS / CAPACITORS, THIN FILM ON SILICON (TFOS)

INTEGRATED PASSIVE COMPONENTS

RESISTOR / CAPACITOR NETWORKS

Resistance tolerance: K ($\pm 10\%$), M ($\pm 20\%$)
Capacitance tolerance: M ($\pm 20\%$)

Capacitor voltage rating: 20 V
Operating temperature range: $-40^{\circ}\text{C} \dots +125^{\circ}\text{C}$

PACKAGE POWER RATING

Package	S03	S06	S14	N08	Q16	Q20	Q24	Q28	W20
Power Rating	0.2 W	0.225 W	0.225 W	0.4 W	0.8 W	1 W	1 W	1 W	1.2 W

RATING OF RESISTOR / CAPACITOR NETWORKS

PRODUCT CODE	CIRCUIT SCHEMATICS	PACKAGES	RESISTANCE RANGE (E24)	T.C.R. (ppm/K)	CAPACITANCE RANGE (E24)	DIODE BREAK-DOWN VOLTAGE	ESD* WITHSTANDING VOLTAGE (HBM)
ACA ACB ACC		Q20 W20 Q24	10 Ω ...1 k Ω	± 200	33 pF...250 pF	—	—
TFA		Q20 W20	10 Ω ...1 k Ω	± 200	22 pF...250 pF	—	—
TFB		Q20 W20	10 Ω ...1 k Ω	± 200	22 pF...250 pF	± 15 V	± 8 kV
LFA		Q20 W20	10 Ω ...1 k Ω	± 200	22 pF...250 pF	—	—
CRA CRB		S03 S06	10 Ω ...1 k Ω	± 200	22 pF...250 pF	—	—
CTX		S03	10 Ω ...1 k Ω	± 200	22 pF...250 pF	—	—
EA □		Q28	R1: 1 k Ω R2: 33 Ω EAA: 2.2 k Ω EAB: 4.7 k Ω EAD: 33 Ω	± 200	C: 150 pF EAA: 150 pF EAB: 180 pF EAD: 180 pF	± 6 V	± 16 kV
AA □		Q24	AAA: 1 k Ω AAB: 2.2 k Ω AAC: 4.7 k Ω AAD: 33 Ω	± 200	AAA: 180 pF AAB: 220 pF AAC: 180 pF AAD: 180 pF	± 6 V	± 8 kV
AP □		Q20	APA: 1 k Ω APB: 2.2 k Ω APC: 4.7 k Ω APD: 33 Ω	± 200	APA: 180 pF APB: 220 pF APC: 180 pF APD: 180 pF	—	—
USD		Q16	R1: 33 Ω R2: 15 k Ω	± 200	47 pF	± 6 V	± 8 kV
USU		N06	R1: 33 Ω R2: 1.5 k Ω	± 200	47 pF	± 6 V	± 8 kV

* Human Body Model (Mil-Std-883) C=100pF R=1.5k Ω Air discharge

PERFORMANCE

TEST ITEM	PERFORMANCE REQUIREMENTS		TEST METHODS
	MAXIMUM ΔR (% $\pm 1\Omega$)	MAXIMUM ΔC (% ± 1 pF)	
Resistance to soldering heat	+ 0.25	+ 1	MIL-R-55342 4.7.7
Short time overload	+ 0.5	+ 0.5	MIL-R-55342 4.7.5
Moisture Resistance	+ 0.5	+ 0.5	MIL-STD-202 method 103
Rapid change of temperature	+ 0.5	+ 0.5	MIL-STD-202 method 107
HAST	+ 1	+ 1	2atm, 121°C, 96hrs

DIODES

THIN FILM ON SILICON (TFOS) INTEGRATED PASSIVE COMPONENTS KPC

DIODE NETWORKS

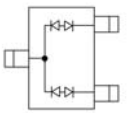
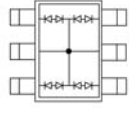
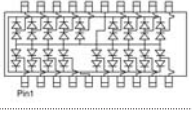
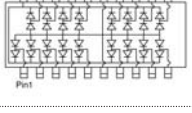
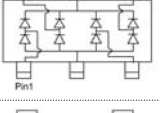
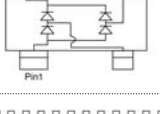
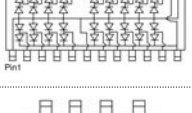
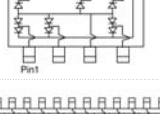
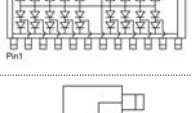
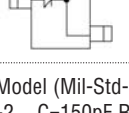
Absolute maximum ratings (Ta = +25°C)

■ T_{op}= Operating temperature range: -40°C...+85°C

■ V_s= Supply voltage (V_p-V_n) : 8 V

■ Continuous forward current : 50 mA

RATING OF DIODE NETWORKS

PRODUCT CODE	CIRCUIT SCHEMATICS	PACKAGE	V _{BD} / V _F IF = 1 mA		LEAKAGE CURRENT VR = 6.5 V		CAPACITANCE @ 1 MHz		CHANNEL CLAMP. VOLTAGE H.B.M*	ESD** VOLTAGE CAPABILITY
			MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	TYP.	MIN.
EDA		S03	16 V	27 V	-	1 µA	1 pF	5 pF	15 V	16 kV
EDB		S06	16 V	27 V	-	1 µA	1 pF	5 pF	15 V	16 kV
DNA		Q20	0.6 V	1.0 V	0.1 µA	2 µA	1 pF	5 pF	10 V	16 kV
DN2		Q20	0.6 V	1.0 V	0.1 µA	2 µA	1 pF	5 pF	10 V	16 kV
DN3		S06	0.6 V	1.0 V	0.1 µA	2 µA	1 pF	5 pF	10 V	16 kV
DN4		S14	0.6 V	1.0 V	0.1 µA	2 µA	1 pF	5 pF	13 V	16 kV
DN5		Q24	0.6 V	1.0 V	0.1 µA	2 µA	1 pF	5 pF	10 V	16 kV
DN6		N08	0.6 V	1.0 V	0.1 µA	2 µA	1 pF	5 pF	13 V	16 kV
DN7		Q24	0.6 V	1.0 V	0.1 µA	2 µA	1 pF	5 pF	13 V	16 kV
DN8		S03	0.6 V	1.0 V	0.1 µA	2 µA	1 pF	5 pF	10 V	16 kV

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

*Human Body Model (Mil-Std-883) C=100pF R=1.5kΩ Air discharge

**IEC 61000-4-2 C=150pF R=330Ω Air discharge

RESISTORS / CAPACITORS / DIODES

THIN FILM ON SILICON (TFOS) INTEGRATED PASSIVE COMPONENTS KPC

TYPE DESIGNATION (HOW TO ORDER)

RESISTOR NETWORKS (RIA, RBA, RBB)

Old Part No.	RIA	Q20	F		B	1002	B		B
New Part No. (Pb-free)	RIA	Q20		T	TE	1002	B	E	B
	PRODUCT CODE RIA, RBA, RBB	PACKAGE SYMBOL Package Type + Number of Pins	T.C.R. F: $\pm 25\text{ppm/K}$ G: $\pm 50\text{ppm/K}$ H: $\pm 100\text{ppm/K}$	TERMINATION SURFACE MATERIAL T: Sn L: Sn/Pb	TAPING TE: embossed plastic	NOMINAL RESISTANCE B, C, D, F: 4 digits G, J: 3 digits	ABSOLUTE RESISTANCE TOLERANCE B, C, D, F, G, J	T.C.R. T: $\pm 10\text{ppm/K}$ E: $\pm 25\text{ppm/K}$ C: $\pm 50\text{ppm/K}$ H: $\pm 100\text{ppm/K}$	RATIO OF RESISTANCE TOLERANCE B, C, D, F, G "Blank": not specified

*Please see "PACKAGING"

NETWORKS
(PASSIVE COMPONENTS)

RESISTOR NETWORKS (RDA)

Old Part No.	RDA	Q20	H		B	471J	511J	
New Part No. (Pb-free)	RDA	Q20		T	TE	471J	511J	H
	PRODUCT CODE RDA (Dual terminator network)	PACKAGE SYMBOL Package Type + Number of Pins	T.C.R. F: $\pm 25\text{ppm/K}$ G: $\pm 50\text{ppm/K}$ H: $\pm 100\text{ppm/K}$	TERMINATION SURFACE MATERIAL T: Sn L: Sn/Pb	TAPING TE: embossed plastic	NOMINAL RESISTANCE & TOLERANCE OF R1 G, J: 3 digits	NOMINAL RESISTANCE & TOLERANCE OF R2 G, J: 3 digits	T.C.R. E: $\pm 25\text{ppm/K}$ C: $\pm 50\text{ppm/K}$ H: $\pm 100\text{ppm/K}$

*Please see "PACKAGING"

RESISTOR NETWORKS (RNX, RTX, RTY)

Old Part No.	RNX	Q20		B	5001
New Part No. (Pb-free)	RNX	Q20	T	TE	5001
	PRODUCT CODE RNX, RTX, RTY	PACKAGE SYMBOL Package Type + Number of Pins	TERMINATION SURFACE MATERIAL T: Sn L: Sn/Pb	TAPING TE: embossed plastic	KOA REFERENCE NUMBER

*Please see "PACKAGING"

RESISTOR / CAPACITOR NETWORKS (ACA, ACB, ACC, TFA, LFA)

Old Part No.	ACB	Q20		B	330M	470M
New Part No. (Pb-free)	ACB	Q20	T	TE	330M	470M
	PRODUCT CODE ACA, ACB, ACC, LFA, TFA	PACKAGE SYMBOL Package Type + Number of Pins	TERMINATION SURFACE MATERIAL T: Sn L: Sn/Pb	TAPING TE: embossed plastic	NOMINAL RESISTANCE & TOLERANCE 3 digits, M: $\pm 20\%$	NOMINAL CAPACITANCE & TOLERANCE Unit: pF / 3 digits 470 = 47pF M: $\pm 20\%$

*Please see "PACKAGING"

DIODE NETWORKS (EDA, EDB, DNA, DN2, DN3, DN4, DN5, DN6, DN7, DN8)

Old Part No.	DN5	Q24		B
New Part No. (Pb-free)	DN5	Q24	T	TE
	PRODUCT CODE Diode Networks EDA, EDB, DNA, DN2, DN3, DN4, DN5, DN6, DN7, DN8	PACKAGE SYMBOL Package Type + Number of Pins	TERMINATION SURFACE MATERIAL T: Sn L: Sn/Pb	TAPING TE: embossed plastic

*Please see "PACKAGING"

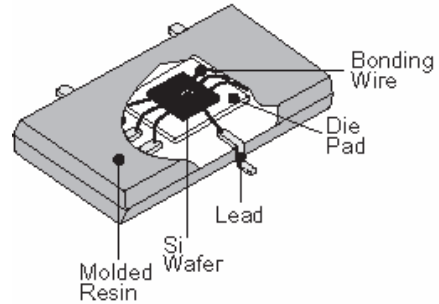
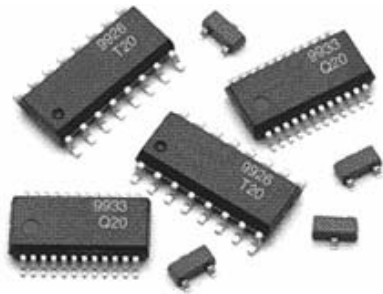
Please contact KOA about ordering codes for products which are not mentioned above.

Customer specific networks on request.

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Bidirectional ESD / Transient Suppressors



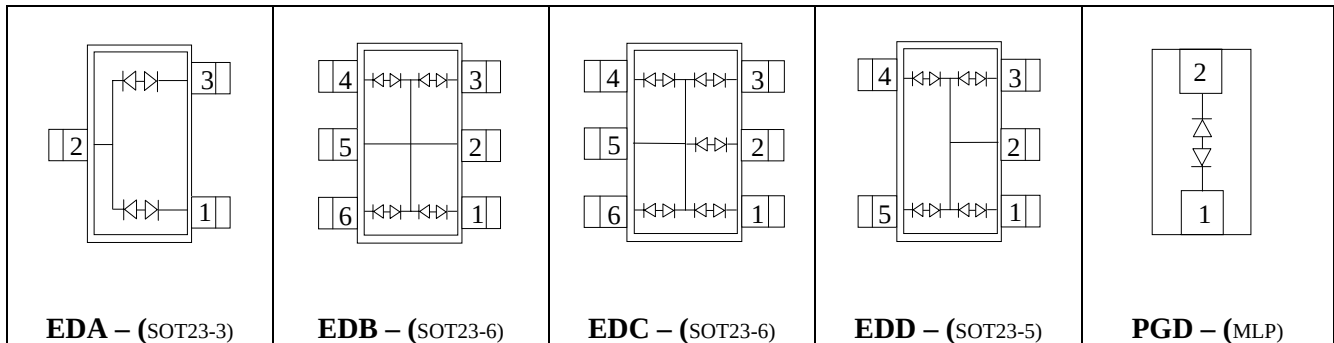
Features:

(16kV) IEC 61000-4-2 rating
Surface Mount Package
High component Density

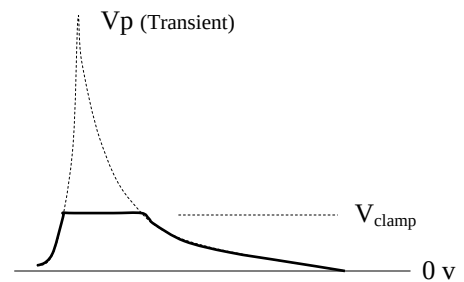
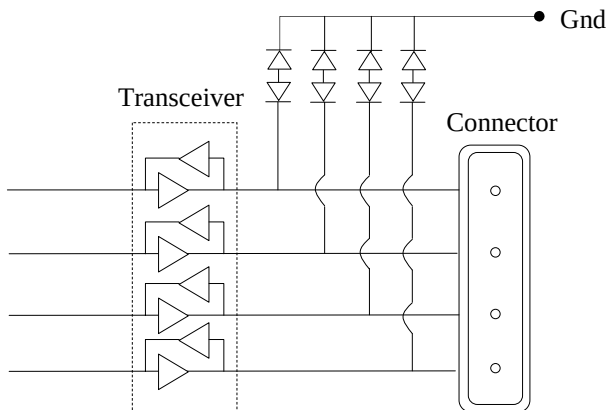
Applications:

ESD Suppression
Transient Suppression

Schematics:



Application:



Specifications:(Ta = 25°C)

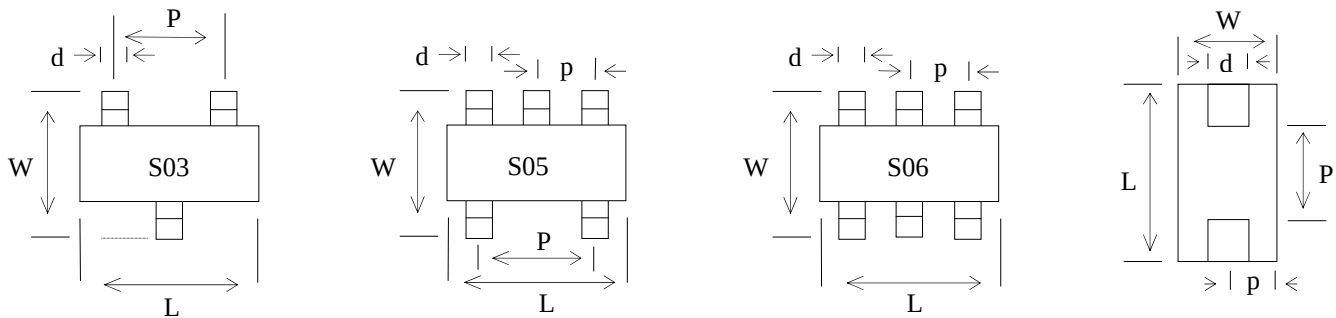
EDA & EDB

Symbol	Characteristic	Min	Typ	Max	Units	Test Condition
V _{BD}	Diode breakdown voltage	16	20	27	V	I _F = 1 ma
I _L	Leakage current		+0.1	+ 2.0	uA	14v
C _T	Capacitance		2.0	5.0	pF	@ 1Mhz
V _{ESD}	Channel clamp voltage		-	+ 27.0	V	8kV H.B.M.
V _{PV}	Peak ESD voltage capability			16	kV	IEC 61000-4-2

EDC, EDD & PGD

Symbol	Characteristic	Min	Typ	Max	Units	Test Condition
V _{BD}	Diode breakdown voltage	5.1	7.0	10	V	I _F = 1 ma
I _L	Leakage current		+0.1	+ 2.0	uA	5v
C _T	Capacitance		1.5	3.0	pF	@ 1Mhz
V _{ESD}	Channel clamp voltage		-	+ 7.0	V	8kV event
V _{PV}	Peak ESD voltage capability			16	kV	IEC 61000-4-2

Package Information:



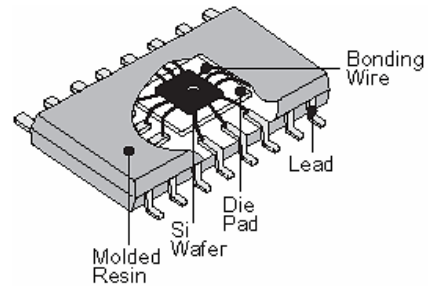
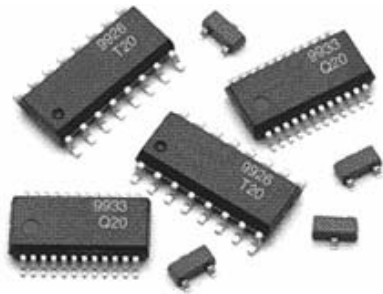
Dimensions in (mm):

Package Code	Package Power	Number of Pins	L ± 0.2	W ± 0.2	p ± 0.1	P ± 0.1	Pkg. Height ± 0.2	d ± 0.1
S03	225 mw	3	2.90	2.30	-	1.90	1.0	0.43
S05	225 mw	5	2.90	2.80	0.95	1.90	1.0	0.43
S06	225 mw	6	2.90	2.80	0.95	-	1.0	0.43
1E	100mw	2	1.1	0.75	0.38	0.33	0.75	0.35

Ordering Information:

EDA	S03	T	TE	5V0
Type	Package Code	Lead Plating	Taping	Voltage
EDA	From table above	T = 100% Tin	TE = 7" reel	5V0
EDB			embossed tape	16V
EDC				
EDD				
PGD				

Bidirectional ESD / Transient Suppressors



Features:

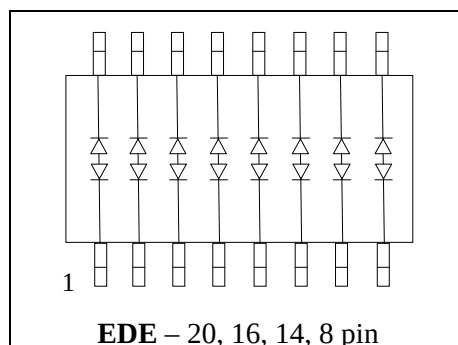
(16kV) IEC 61000-4-2 rating
Surface Mount Package
High component Density

Applications:

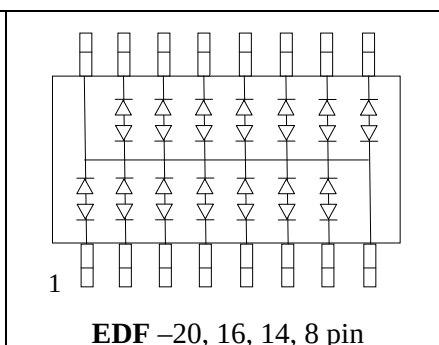
ESD Suppression
Transient Suppression

Schematics:

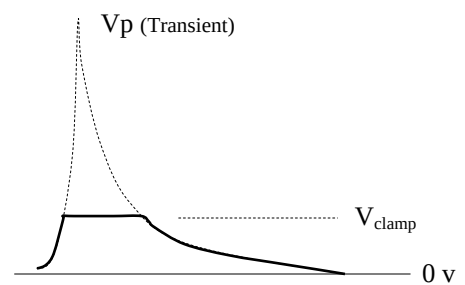
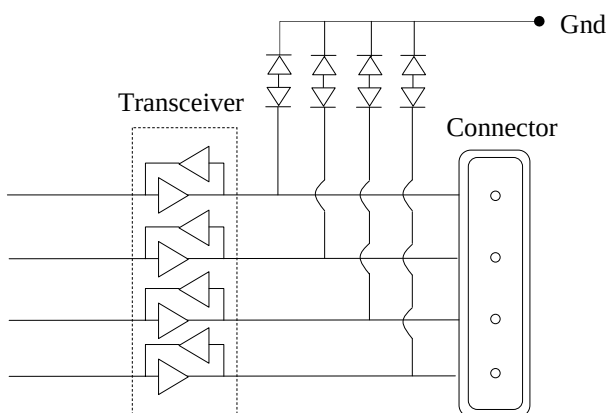
Isolated



Bussed



Application:

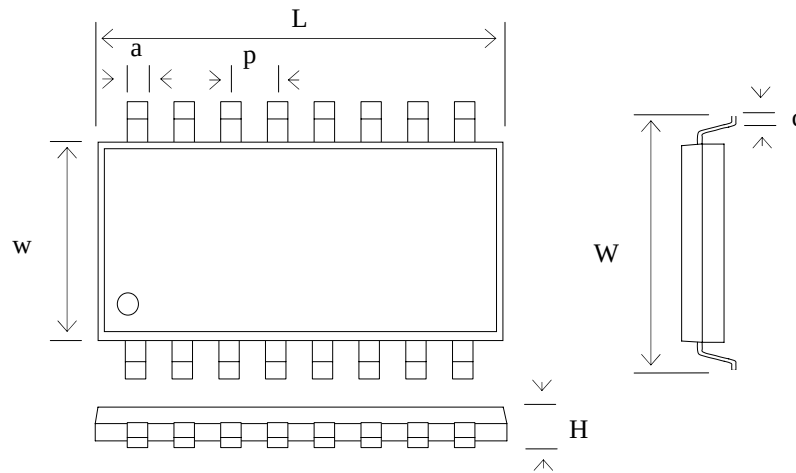


Specifications:(Ta = 25°C)

EDE & EDF

Symbol	Characteristic	Min	Typ	Max	Units	Test Condition
V _{BD}	Diode breakdown voltage	5.1	7.0	10	V	I _F = 1 ma
I _L	Leakage current		±0.1	± 2.0	uA	5v
C _T	Capacitance		1.5	3.0	pF	@ 1Mhz
V _{ESD}	Channel clamp voltage		-	± 7.0	V	8kV event
V _{PV}	Peak ESD voltage capability			16	kV	IEC 61000-4-2

Package Information:



Dimensions in (mm):

Package Code	Package Power	Number of Pins	L ± 0.2	W ± 0.2	w ± 0.2	H ± 0.2	p ± 0.1	a ± 0.1	c ± 0.1
N08	0.4 w	08	4.83	5.99	3.81	1.60	1.27	0.41	0.66
N14	0.6 w	14	8.66	5.99	3.81	1.60	1.27	0.41	0.66
N16	0.8 w	16	9.91	5.99	3.81	1.60	1.27	0.41	0.66
W16	1.0 w	16	10.44	10.36	7.62	2.40	1.27	0.41	0.66
W20	1.2 w	20	12.70	10.36	7.62	2.40	1.27	0.41	0.66

Ordering Information:

EDE

N16

L

TEB

5V0

Type

Package Code

Lead Plating

Taping

Voltage

EDE
EDF

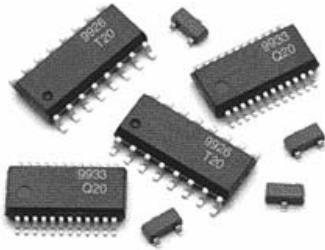
From table above

L = SnPb
T = 100% Tin

TEB =
13" reel
embossed tape

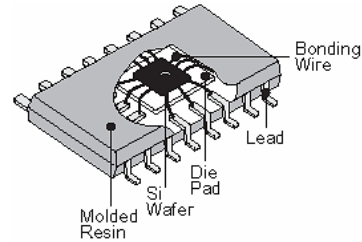
5V0

300 Watt Transient Voltage Suppressor



Features:

(16kV) IEC 61000-4-2 rating
 8/20 us transient rating
 Four working voltages (5, 12, 15, 24)
 Narrow SOIC package (8 & 14 pin)



Applications:

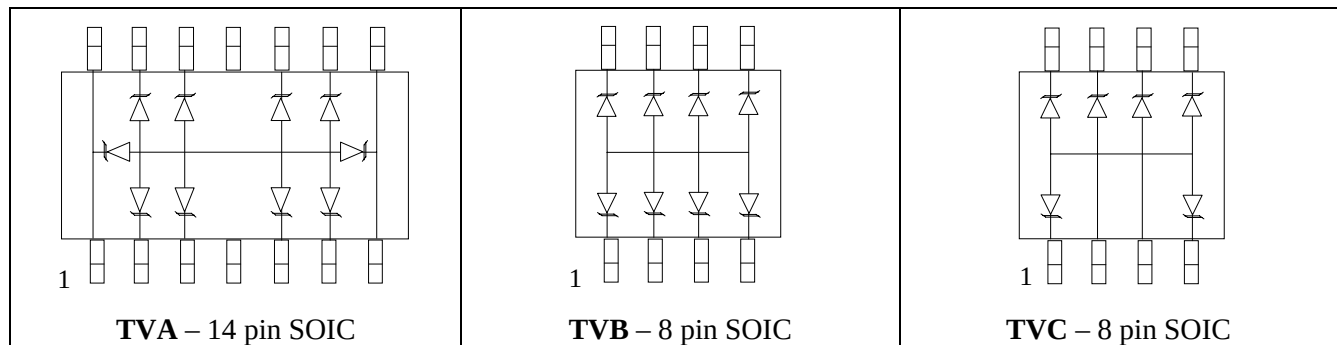
Transient / ESD Suppression
 LAN/WAN
 Peripherals
 Set-Top Boxes

Schematics:

TVA

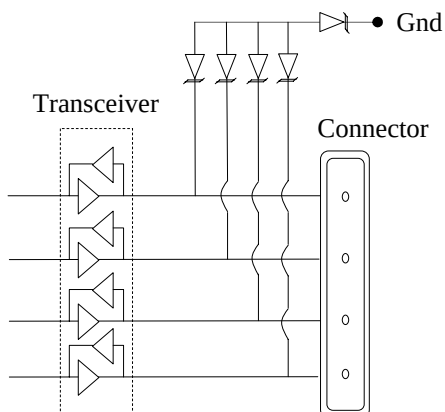
TVB

TVC

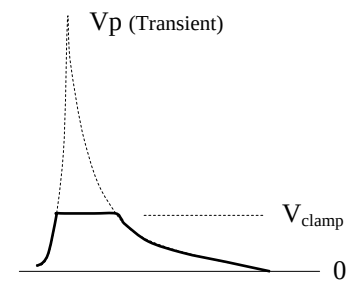
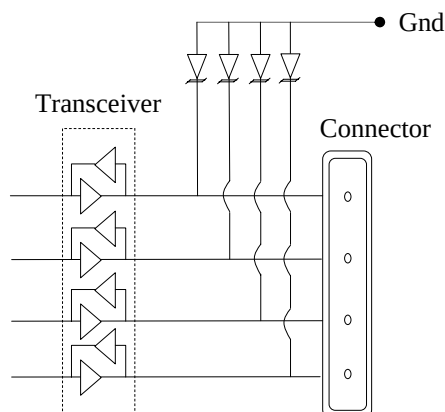


Application:

Bidirectional



Unidirectional



Specifications:(Ta = 25°C)

Rating	Symbol	Value	Units
Peak Pulse Power (8/20 us)	P _{PK}	300	Watts
Operating Temp. Range	T _J	-55 to +125	°C
Soldering Temperature	T _L	260 (10 sec.)	°C

5V Volt Characteristics (5V0)

Symbol	Characteristic	Min	Typ	Max	Units	Test Condition
V _{BD}	Reverse breakdown voltage	6.0			V	I _F = 1 ma
I _L	Reverse leakage current			10	uA	@ V _{BD} = 5v
C _T	Capacitance			350	pF	@ 1Mhz
V _C	Channel clamp voltage			10	V	8 / 20us, 1 Amp
I _{pp}	Peak pulse current			17	Amps	8 / 20 us

12 Volt Characteristics (12V)

Symbol	Characteristic	Min	Typ	Max	Units	Test Condition
V _{BD}	Reverse breakdown voltage	13.3			V	I _F = 1 ma
I _L	Reverse leakage current			1	uA	@ V _{BD} = 12v
C _T	Capacitance			120	pF	@ 1Mhz
V _C	Channel clamp voltage			20	V	8 / 20us, 1 Amp
I _{pp}	Peak pulse current			12	Amps	8 / 20 us

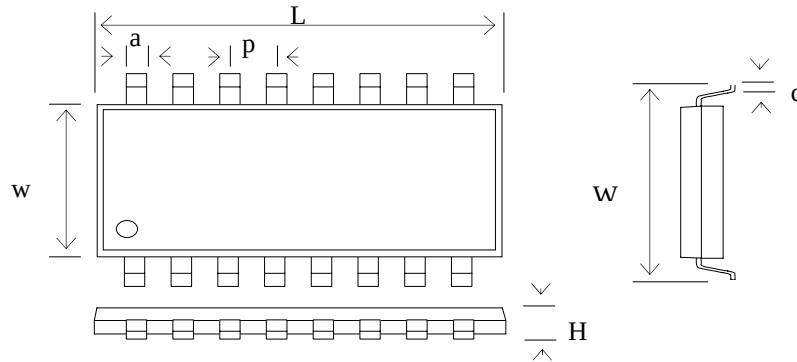
15 Volt Characteristics (15V)

Symbol	Characteristic	Min	Typ	Max	Units	Test Condition
V _{BD}	Reverse breakdown voltage	16.7			V	I _F = 1 ma
I _L	Reverse leakage current			1	uA	@ V _{BD} = 15v
C _T	Capacitance			75	pF	@ 1Mhz
V _C	Channel clamp voltage			24	V	8 / 20us, 1 Amp
I _{pp}	Peak pulse current			10	Amps	8 / 20 us

24 Volt Characteristics (24V)

Symbol	Characteristic	Min	Typ	Max	Units	Test Condition
V _{BD}	Reverse breakdown voltage	26.7			V	I _F = 1 ma
I _L	Reverse leakage current			1	uA	@ V _{BD} = 24v
C _T	Capacitance			50	pF	@ 1Mhz
V _C	Channel clamp voltage			43	V	8 / 20us, 1 Amp
I _{pp}	Peak pulse current			5	Amps	8 / 20 us

Package Information:



Dimensions in (mm):

Package Code	Package Power	Number of Pins	L ± 0.2	W ± 0.2	w ± 0.2	H ± 0.2	p ± 0.1	A ± 0.1	c ± 0.1
N08	0.4 w	08	4.83	5.99	3.81	1.60	1.27	0.41	0.66
N14	0.6 w	14	8.66	5.99	3.81	1.60	1.27	0.41	0.66

Ordering Information:

TVA

N14

L

TEB

24V

Type

TVA

TVB

TVC

Package Code

From table above

Lead Plating

L = SnPb

T = 100% Tin

Taping

TEB =

13" reel

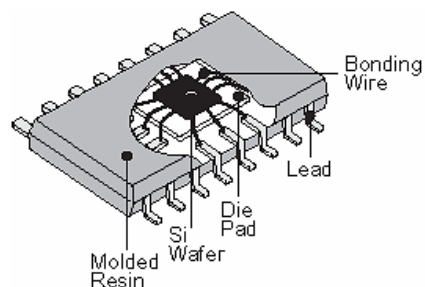
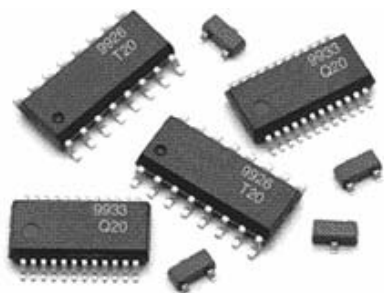
embossed tape

Voltage

5V0, 12V

15V, 24V

Steering Diode Arrays – ESD Suppressors



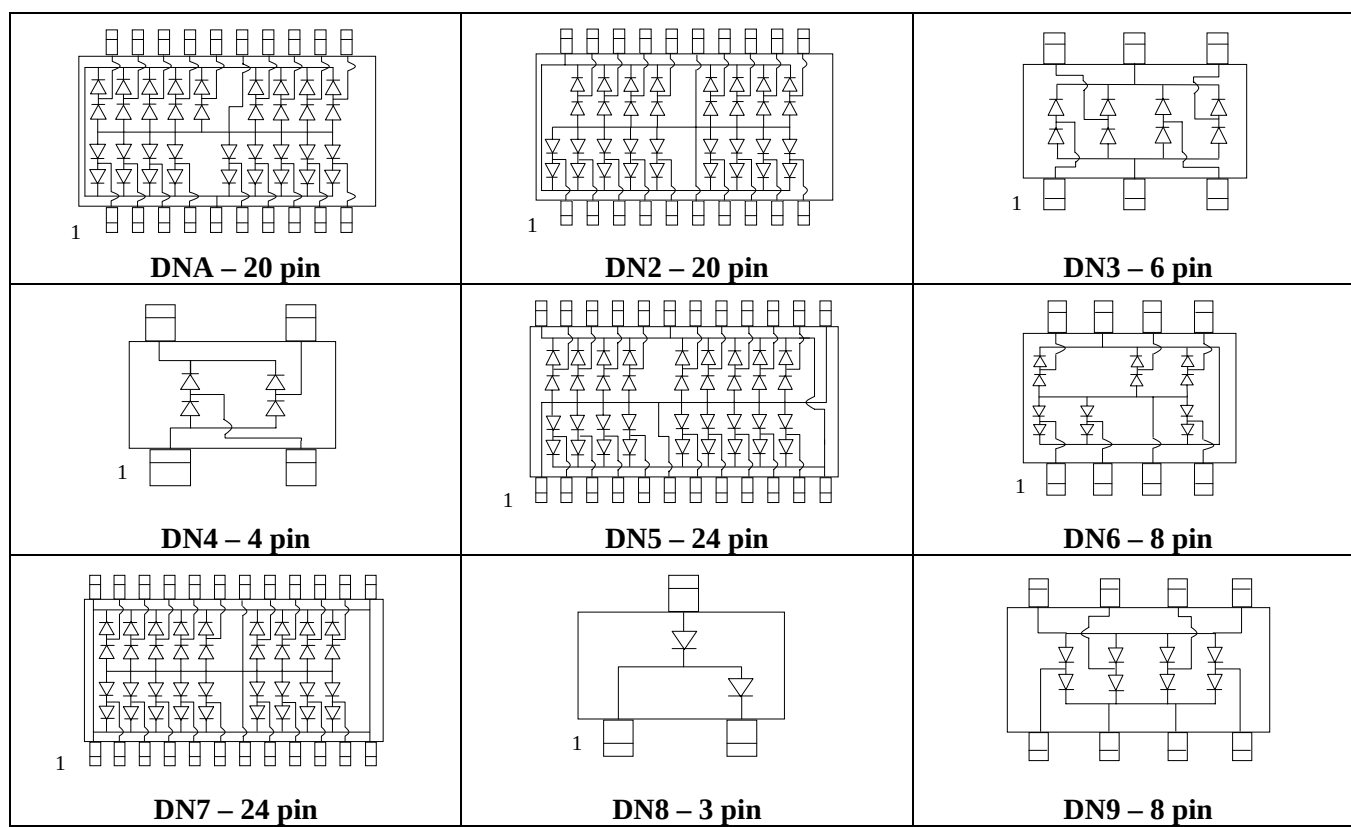
Features:

Fast Reverse Recovery Time
Fast Turn on Time
Low Capacitance
SMD Packages
16kV IEC61000-4-2 capable

Applications:

Signal Termination
Signal Conditioning
ESD Suppression
Transient Suppression

Schematics:



Absolute Maximum Ratings: (Ta = 25°C)

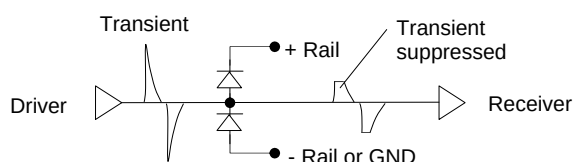
Symbol	Parameter	Value	Units
T _{OP}	Operating temperature	-40 to +85	°C
V _S	Supply voltage (rail to rail)	8	V
I _F	Continuous forward current *	50	mA

* One diode conducting.

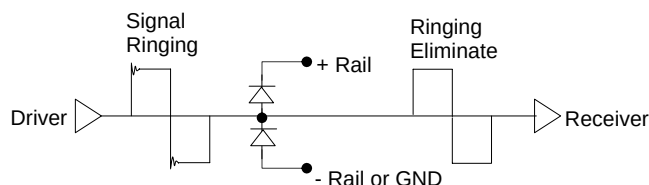
Electrical Ratings: (Ta = 25°C)

Symbol	Characteristic	Min	Max	Units	Test Condition
V _F	Forward voltage	0.6	0.95	V	I _F = 50 ma
V _R	Reverse breakdown voltage	7.2	-	V	I _R = 1 ma
I _L	Reverse leakage current	+ 0.1	+ 2.0	uA	7.1v
C _T	Capacitance	1.0	5.0	pF	@ 1Mhz
V _{PV}	Peak ESD voltage capability		16	kV	IEC 61000-4-2

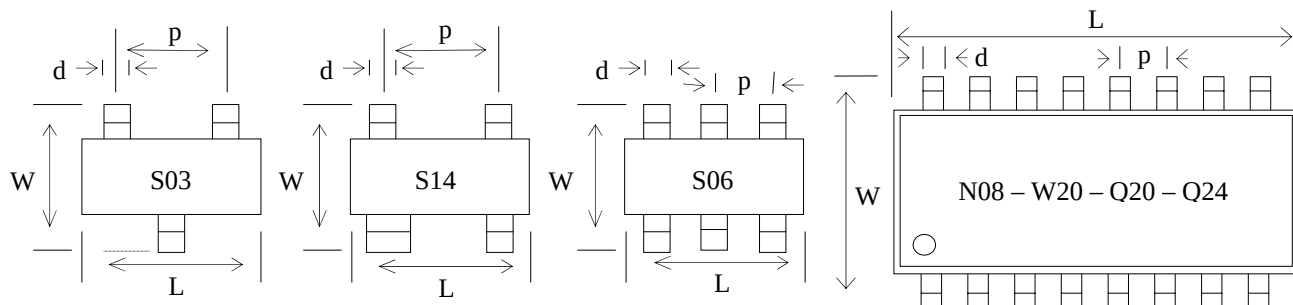
Application: (ESD Suppression)



(Signal Conditioning)



Package Information:



Package Code	Total Power	Number of Pins	L ± 0.2	W ± 0.2	p ± 0.1	Pkg. Height ± 0.2	d ± 0.05
S03	225 mw	3	2.92	2.30	1.91	0.95	0.43
S14	225 mw	4	2.92	2.30	1.91	0.95	0.43
S06	225 mw	6	2.92	2.80	0.95	0.95	0.43
N08	400 mw	8	4.83	5.99	1.27	1.60	0.41
W20	1200mw	20	12.70	10.36	1.27	2.40	0.41
Q20	1000mw	20	8.66	5.99	0.635	1.60	0.25
Q24	1000mw	24	8.66	5.99	0.635	1.60	0.25

Ordering Information:

DNA

Type

DNA
DN2
DN3
DN4
DN5
DN6
DN7
DN8, DN9

Q20

Package

S03 = 3 pin SOT23
S14 = 4 pin SOT23
S06 = 6 pin SOT23
N08 = 8 pin Narrow SOIC
W20 = 20 pin Wide SOIC
Q20 = 20 pin QSOP
Q24 = 24 pin QSOP

L

Lead Plating

T = 100% Tin
L = SnPb

TEB

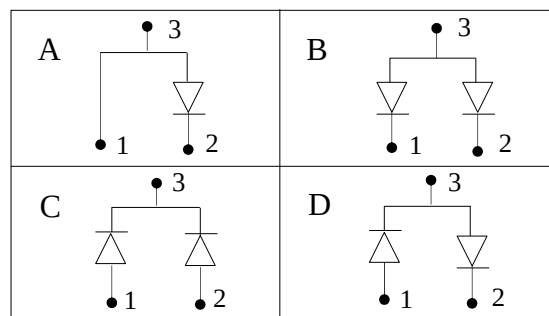
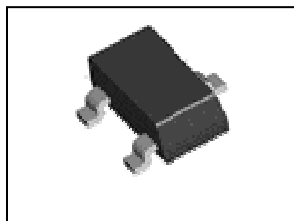
Taping

TEB = 13" reel, embossed tape
TE = 7" reel, embossed tape

Switching Diode Networks

Package

SOT - 23



Absolute Maximum Ratings: ($T_a = 25^{\circ}\text{C}$)

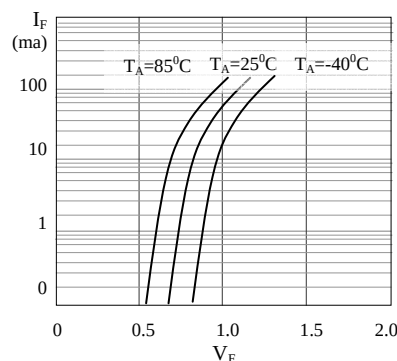
Parameter	Symbol	Value	Units
Continuous Reverse Voltage	V_R	75	V_{DC}
DC Forward Current	I_F	215	mAdc
Peak Forward Surge Current	I_{FM}	450	mAdc

Electrical Ratings: ($T_a = 25^{\circ}\text{C}$)

Characteristic	Symbol	Min	Max	Units	Test Condition
Reverse Breakdown Voltage	V_{BR}	80		Vdc	$I_{BR} = 100 \mu\text{Adc}$
Reverse Voltage Leakage Current	I_R		50 1	μAdc	$V_R = 75 @ 150^{\circ}\text{C}$ $V_R = 75 @ 25^{\circ}\text{C}$
Diode Capacitance	C_D		3	pF	$V_R = 0, f = 1 \text{ Mhz}$
Forward Voltage	V_F		855 1000 1250	mV	$I_F = 10 \text{ mAdc}$ $I_F = 50 \text{ mAdc}$ $I_F = 150 \text{ mAdc}$
Reverse Recovery Time	T_{rr}		6.0	ns	$I_F = I_R = 10 \text{ mAdc}$ $R_L = 100 \text{ ohms}$

Thermal Characterisitics:

Parameter	Symbol	Value	Units
Total Power Dissipation (FR4)	P_D	225	mW
Thermal Resistance – Junction Ambient	$R_{\theta ja}$	500	$^{\circ}\text{C/W}$
Junction and Storage Temperature	T_j, T_{stj}	-55 to +150	$^{\circ}\text{C}$

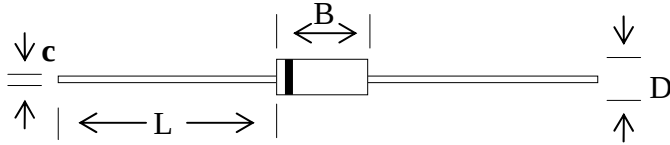


Ordering Information:

SDA	S03	L	TE
Type	Package	Lead Plating	Taping
SDA, SDB	S03 =	T = Tin	7" reel
SDC, SDD	SOT-23	L = SnPb	

Fast Switching Diode

Package: DO-35



Dimensions in (mm)

Dim.	Min.	Max.
L	25.4	-----
B	3.03	4.44
D	1.52	2.29
c	0.46	0.56

Absolute Maximum Ratings: ($T_a = 25^{\circ}\text{C}$)

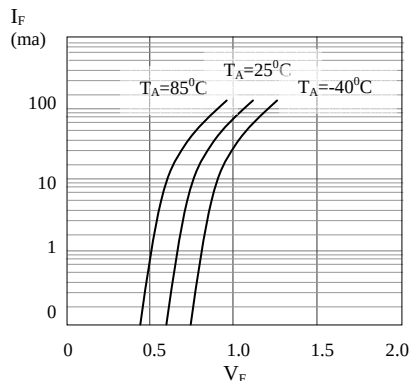
Parameter	Symbol	Value	Units
Continuous Reverse Voltage	V_R	75	V_{DC}
DC Forward Current	I_F	200	mAdc
Peak Forward Surge Current	I_{FM}	450	mAdc

Electrical Ratings: ($T_a = 25^{\circ}\text{C}$)

Characteristic	Symbol	Min	Max	Units	Test Condition
Reverse Breakdown Voltage	V_{BR}	75		Vdc	$I_{BR} = 100 \text{ uAdc}$
Reverse Voltage Leakage Current	I_R		100 5.0	uAdc	$V_R = 75 @ 150^{\circ}\text{C}$ $V_R = 75 @ 25^{\circ}\text{C}$
Diode Capacitance	C_D		3	pF	$V_R = 0, f = 1 \text{ Mhz}$
Forward Voltage	V_F		720 850 1000	mV	$I_F = 5 \text{ mAdc}$ $I_F = 10 \text{ mAdc}$ $I_F = 100 \text{ mAdc}$
Reverse Recovery Time	T_{rr}		4.0	ns	$I_F = I_R = 10 \text{ mAdc } R_L = 100 \text{ ohms}$

Thermal Characterisitics:

Parameter	Symbol	Value	Units
Total Power Dissipation (FR4)	P_D	500	mW
Thermal Resistance – Junction Ambient	$R_{\theta ja}$	556	$^{\circ}\text{C/W}$
Junction and Storage Temperature	T_j, T_{stj}	-55 to +150	$^{\circ}\text{C}$

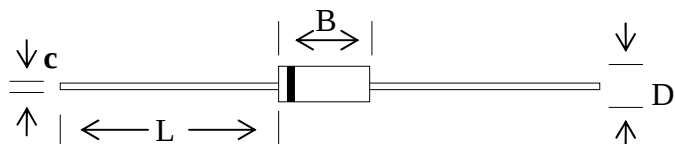


Ordering Information:

FSD	D35	L	T52	R
Type	Package	Lead Plating	Taping	Packaging
FSD	D35 = DO-35	T = Tin L = SnPb	52mm tape	R = reel A = ammo

General Purpose Rectifier

Package: DO-41



Dimensions in (mm)

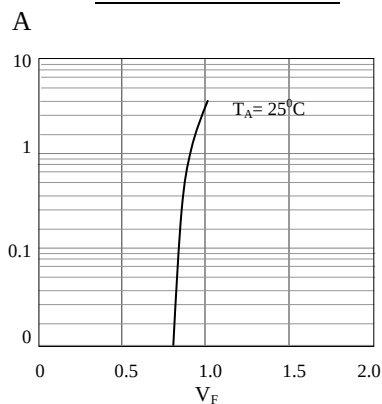
Dim.	Min.	Max.
L	27.9	-----
B	4.05	5.20
D	2.30	2.70
c	0.75	0.87

Absolute Maximum Ratings:

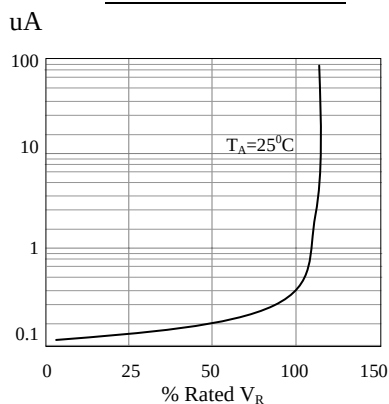
Parameter	Sym.	Type 050	Type 100	Type 200	Type 400	Type 600	Type 800	Type 1000	Unit
Max. repetitive Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Max. DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	V
Max. RMS Voltage	V_{RMS}	35	70	140	280	420	560	700	V
Peak Surge Current 8.3ms half sine-wave + rated Load	I_{FSM}	200							A
Max. Average Forward Current	I_O	3.0							A
Max. Instantaneous Forward Voltage @ 3.0 A	V_F	1.2							V
Max. DC Reverse Current @ Rated DC Blocking Voltage	I_R	5 @ 25°C 1000 @ 125°C							uA
Junction Capacitance @ 80% V_{RRM}	C_J	30							pF
Max. Thermal Resistance	T_{JA}	50							°C/W
Reverse Recovery Time	T_{RR}	4							uS
Operating Junction Temperature	T_J	-55 ~ to ~ +150							°C

Characteristics:

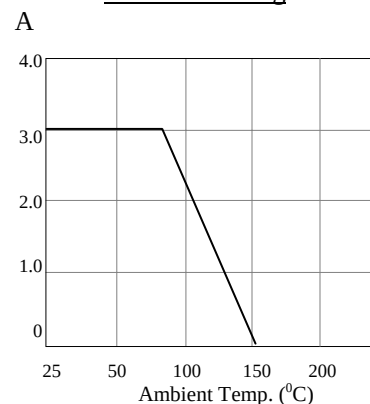
Forward Characteristic



Reverse Characteristic



Current Derating



Ordering Information:

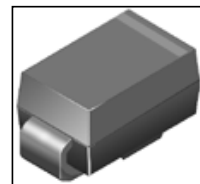
GPR	D41	L	T52	R	050
Type GPR	Package D41 = DO-41	Lead Finish L=SnPb	Taping T52 = 52mm Tape	Packing R=Reel A=Ammo	Voltage 050, 100, 200 400, 600, 800, 1000

General Purpose Rectification Diode

Features:

- Glass Passivated
- Flammability Classification 94V-0
- Cathode Band Identification
- Low Profile
- Built in Strain Relief

DO-214AC (SMA)

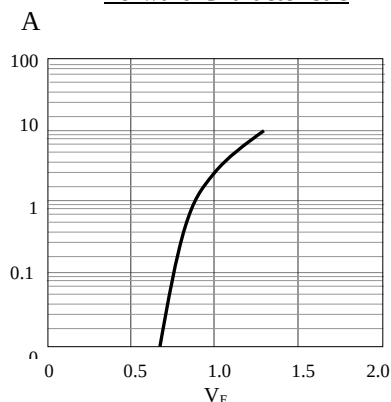


Absolute Maximum Ratings:

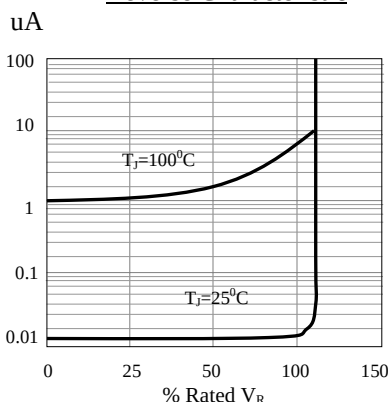
Parameter	Sym.	Type 050	Type 100	Type 200	Type 400	Type 600	Type 800	Type 1000	Unit
Max. repetitive Peak Reverse Voltage	V _{RRM}	50	100	200	400	600	800	1000	V
Max. DC Blocking Voltage	V _{DC}	50	100	200	400	600	800	1000	V
Max. RMS Voltage	V _{RMS}	35	70	140	280	420	560	700	V
Peak Surge Current 8.3ms half sine-wave + rated Load	I _{FSM}	30							A
Max. Average Forward Current	I _O	1.0							A
Max. Instantaneous Forward Voltage @ 1.0 A	V _F	1.1							V
Max. DC Reverse Current @ Rated DC Blocking Voltage	I _R	5 @ 25 ^o C 50 @ 125 ^o C							uA
Junction Capacitance @ 80% V _{RRM}	C _J	5							pF
Max. Thermal Resistance	T _{JA}	75					85		^o C/W
Reverse Recovery Time	T _{RR}	2							uS
Operating Junction Temperature	T _J	-55 ~ to ~ +150							^o C

Characteristics:

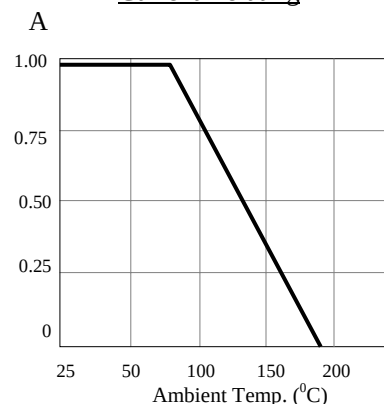
Forward Characteristic



Reverse Characteristic



Current Derating



Ordering Information:

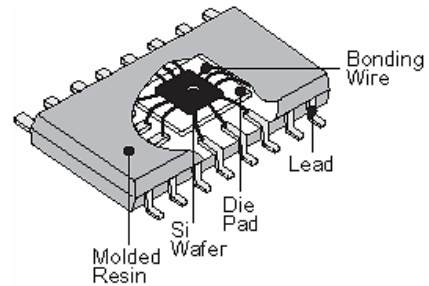
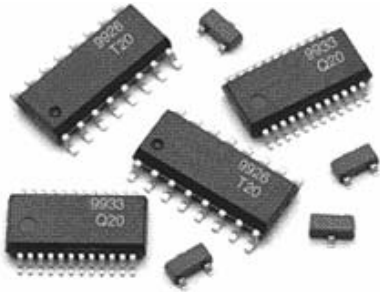
GSR
Type

050
Voltage

L
Lead
Finish
L = SnPb
T = Tin

TE
Taping
TE = 7"
Plastic Tape

R/C Filter Networks



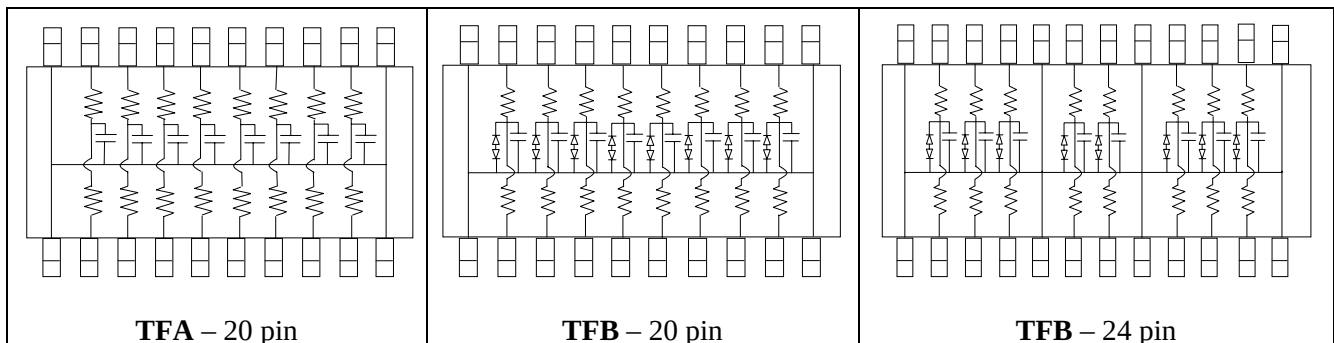
Features:

Thin Film Construction
Surface Mount Package
Stable Resistor Technology
High component Density

Applications:

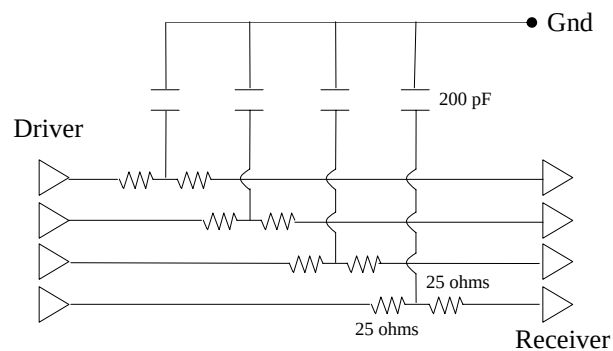
Signal Termination
Signal Conditioning
Low Pass Filter
T Filter

Schematics:



Application:

(Filter Configuration)

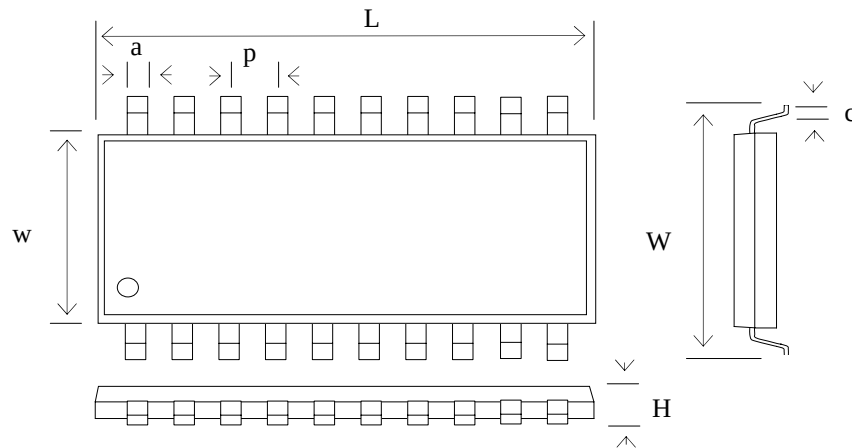


Specifications:

Resistor Tolerance	+/- 10%
Resistance Range	10 to 1,000 ohms
Power Rating / Resistor (70°C)	100 mW
Temp. Coefficient	+/- 200 ppm
Capacitor Tolerance	+/- 20%
Capacitance Range	33pF to 400 pF
Cap. Voltage Rating	20 V
* ESD Rating – IEC 61000-4-2	4kV
* Diode breakdown voltage (@1ma)	6.5 v Min.
Operating Temp. (°C)	-55 ~ +125

* Applies to the TFB device only.

Package Information:



Dimensions in (mm):

Package Symbol	Total Power	Number of Pins	L ± 0.2	W ± 0.2	w ± 0.2	H ± 0.2	p ± 0.1	a ± 0.1	c ± 0.1
Q20	1 watt	20	8.66	5.99	3.81	1.60	0.635	0.25	0.66
Q24	1 watt	24	8.66	5.99	3.81	1.60	0.635	0.25	0.66
W20	1.2 watts	20	12.70	10.36	7.62	2.40	1.27	0.41	0.66

Ordering Information:

TFB	Q24	L	TEB	250	K	/	201	M
Type TFA TFB	Package Code From table above	Lead Plating T = 100% Tin L = SnPb	Taping TEB = 13" reel embossed tape	Resistor Value 2 digits + multiplier	Tolerance K = 10%		Capacitor Value 2 digits + multiplier	Tolerance M = 20%

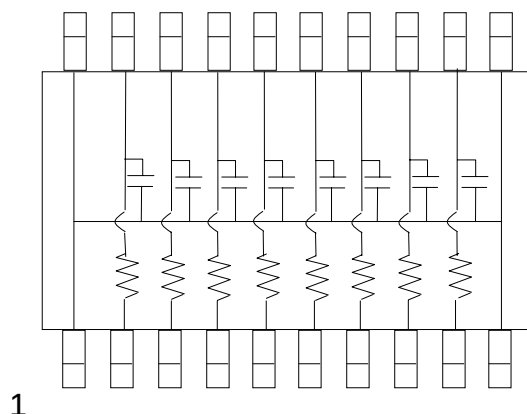
L Filter Resistor / Capacitor Network

Specifications:

Resistor Tolerance	+/- 10%
Temp. Coefficient (ppm/°C)	+/- 200
Resistor Power Rating (70°C)	100 mW
Capacitor Tolerance	+/- 20%
Cap. Voltage Rating	20 V
Power Rating / Package (70°C)	1 W
Operating Temp. (°C)	-55 ~ +150



Schematic:



Standard Circuit Elements:

R = 10 ohm ~ 1K ohm (Std. E24 values)

C = 22pF ~ 250pF (Std. E24 values)

Standard Packages Available:

QSOP / WSOIC

Ordering Information:

LFA

Series

Q20

Package
Q20-QSOP
W20-WSOIC

L

Lead Finish
L =
SnPb

TEB

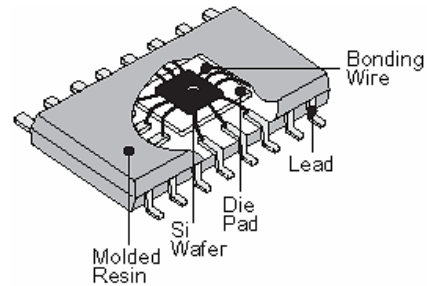
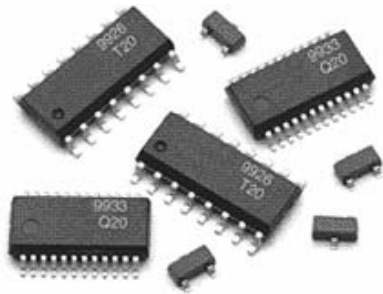
Tape & reel
13" embossed
plastic
tape

500 K / 101 M

- Resistance value and tolerance
- Capacitance value and tolerance
Std. EIA value code + tolerance code
K= ±10% & M= ±20%

500K = 50 ohm ± 10%
101M = 100pF ± 20%

Resistor / Capacitor Filter Networks



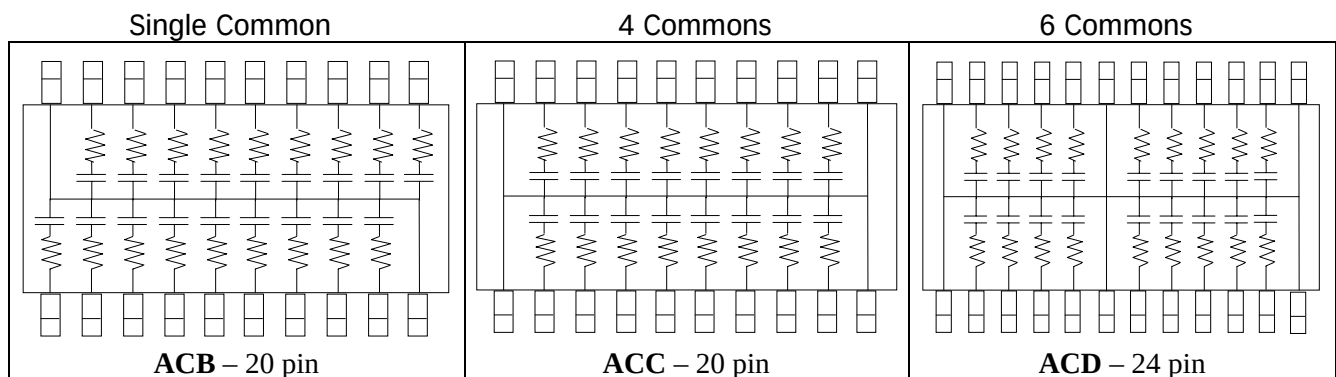
Features:

Thin Film Construction
Surface Mount Package
Stable Resistor Technology
High component Density

Applications:

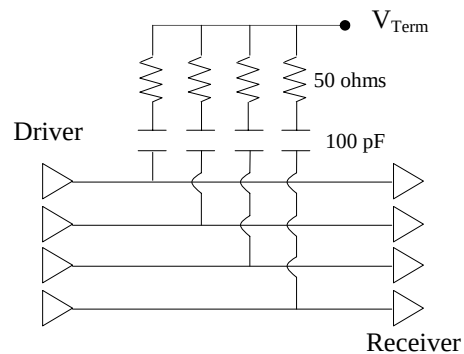
Signal Termination
Signal Conditioning
DC Current Blocking

Schematics:



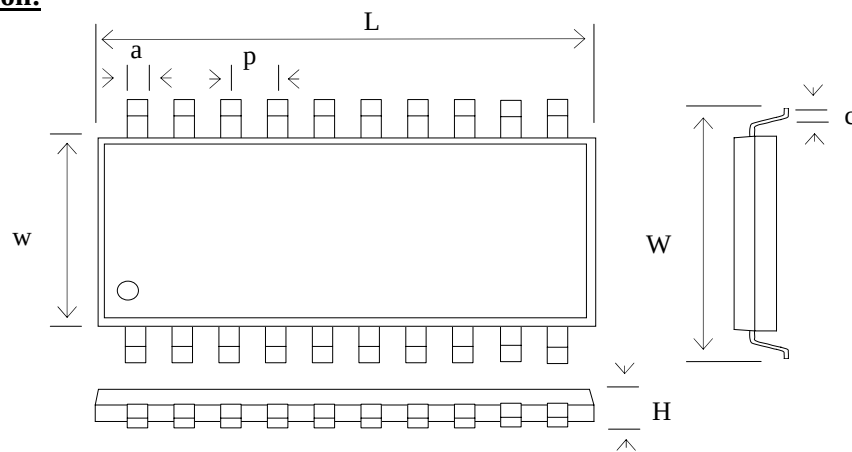
Application:

(Parallel Termination)



Specifications:

Resistor Tolerance	+/- 10%
Resistance Range	10 to 1,000 ohms
Power Rating / Resistor (70°C)	100 mW
Temp. Coefficient	+/- 200 ppm
Capacitor Tolerance	+/- 20%
Capacitance Range	33pF to 400 pF
Cap. Voltage Rating	20 V
Operating Temp. (°C)	-55 ~ +125

Package Information:

Dimensions in (mm):

Package Code	Package Power	Number of Pins	$L \pm 0.2$	$W \pm 0.2$	$w \pm 0.2$	$H \pm 0.2$	$p \pm 0.1$	$a \pm 0.1$	$c \pm 0.1$
Q20	1 watt	20	8.66	5.99	3.81	1.60	0.635	0.25	0.66
Q24	1 watt	24	8.66	5.99	3.81	1.60	0.635	0.25	0.66
W20	1.2 watts	20	12.70	10.36	7.62	2.40	1.27	0.41	0.66

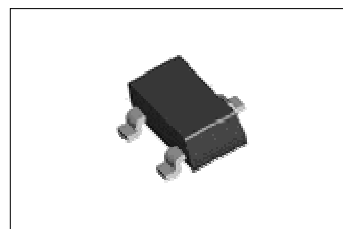
Ordering Information:

ACB	Q20	L	TEB	500	K	/	101	M
Type	Package Code	Lead Plating	Taping	Resistor Value	Tolerance		Capacitor Value	Tolerance
ACB	From table above	T = 100% Tin	TEB = 13" reel embossed tape	2 digits + multiplier	K = 10%		2 digits + multiplier	M = 20%
ACC		L = SnPb						
ACD								

PECL Termination Network

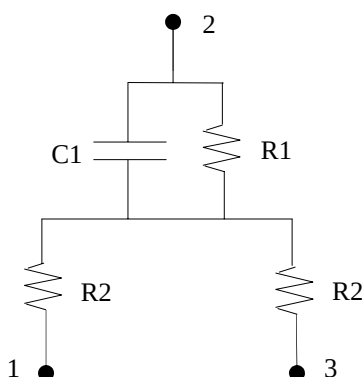
Specifications:

Resistor Tolerance	+/-10%
TCR (ppm/°C)	+/- 200
Capacitor Tolerance	+/-20%
Capacitor Voltage rating	20 v
Resistor Power Rating (70°C)	100mW
Operating Temp. Range (°C)	-55 ~ +150



Marking " CTX "

Schematic:



Standard Circuit Elements:

R = 10 ohm ~ 1K ohm (Std. E24 values)

C = 22pF ~ 250pF (Std. E24 values)

Standard Packages Available:

SOT-23

Ordering Information

CTX

Series

S03

Package

S03 =
SOT-23

L

Lead
Finish

L =
SnPb

TE

Packaging

7" reel
embossed
plastic tape

XXXX

Circuit value code

- Defined by KOA

* Contact KOA for your specific
circuit requirements.

Jumper Network

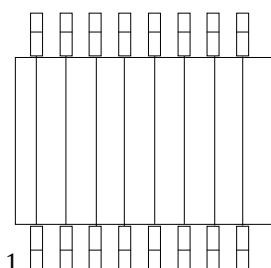
Specifications:

Resistor (maximum)	25 milliohms
Temperature Coefficient (ppm/°C)	± 100
Maximum Working Voltage (volts)	100
Power Rating (70°C)	800mW
Operating Temp. Range (°C)	-50 ~ +150

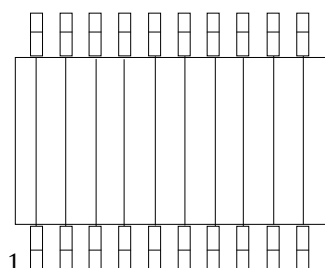


Schematic:

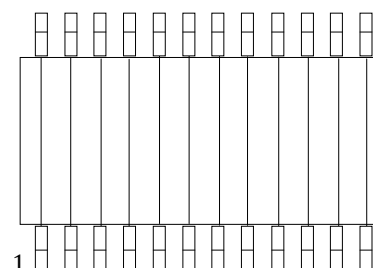
16 Pin



20 Pin



24 Pin



Standard Packages Available:

QSOP / NSOIC / WSOIC

Ordering Information:

RZA	N	16	L	TEB
Series RZA	Package Q = QSOP W = WSOIC N = NSOIC	Pins 08 14 16 20 24	Terminals L = SnPb T = Tin	Packaging 13" reel embossed tape

Precision Resistor Networks

Specifications:

Resistor Tolerance ($\pm$)	$\pm 5\%$
Temperature Coefficient (ppm/ $^{\circ}\text{C}$)	± 100
TCR Tracking (ppm/ $^{\circ}\text{C}$)	10
Value Range (ohms)	10 ~ 47K
Maximum Working Voltage (volts)	100
Resistor Power Rating (70°C)	100mW
Operating Temp. Range ($^{\circ}\text{C}$)	-50 ~ +150

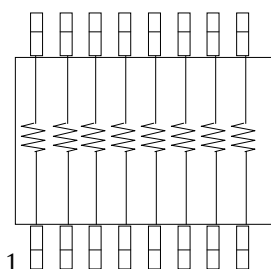


Environmental:

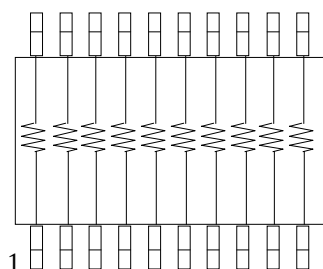
Test Name	Test Condition	Spec.
Resistor to Soldering Heat	MIL-R-55342 4.7.7	<u>±</u> 0.25%
Short Time Overload	MIL-R-55342 4.7.5	+ 0.50%
Moisture Resistance	MIL-STD-202 method 103	<u>±</u> 0.50%
Thermal Shock	MIL-STD-202 method 107	<u>±</u> 0.50%
H.A.S.T.	2 Atm., 121°C. 96 hrs.	+ 1%

Schematic:

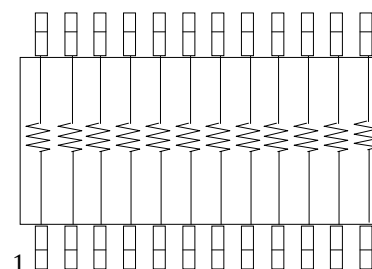
16 Pin



20 Pin



24 Pin



Standard Circuit Elements:

10 ohms ~ 47K ohms (Std. E24 values)

Standard Packages Available:

QSOP / NSOIC / WSOIC

Ordering Information:

[illegible]

Precision Resistor Networks

Specifications:

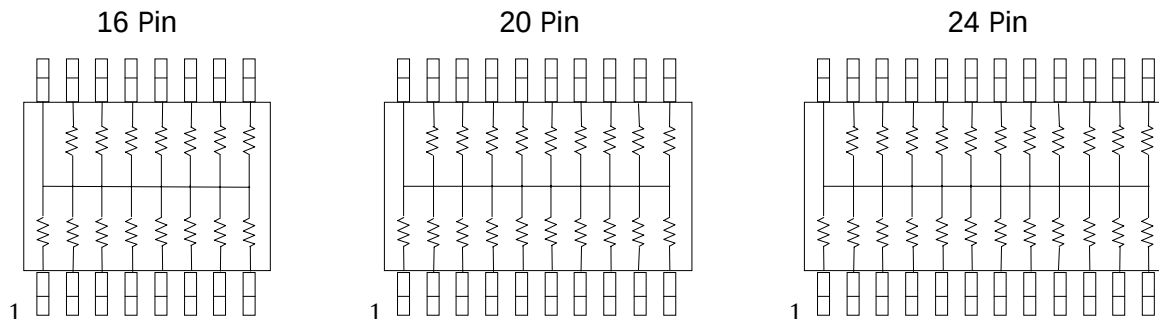
Resistor Tolerance (+/-)	$\pm 5\%$
Temperature Coefficient (PPM/ $^{\circ}\text{C}$)	± 100
TCR Tracking (PPM/ $^{\circ}\text{C}$)	10
Value Range (ohms)	10 ~ 47K
Maximum Working Voltage (volts)	100
Resistor Power Rating (70°C)	50mW
Operating Temp. Range ($^{\circ}\text{C}$)	-50 ~ +150



Environmental:

Test Name	Test Condition	Spec.
Resistor to Soldering Heat	MIL-R-55342 4.7.7	$\pm 0.25\%$
Short Time Overload	MIL-R-55342 4.7.5	+ 0.50%
Moisture Resistance	MIL-STD-202 method 103	$\pm 0.50\%$
Thermal Shock	MIL-STD-202 method 107	$\pm 0.50\%$
H.A.S.T.	2 Atm., 121°C , 96 hrs.	$\pm 1\%$

Schematic:



Standard Circuit Elements:

10 ohms ~ 47K ohms (Std. E24 values)

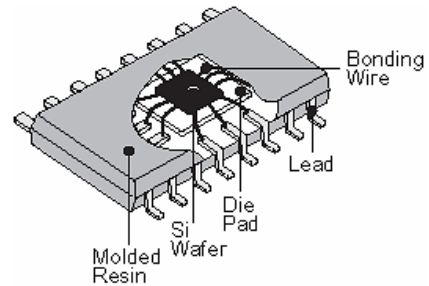
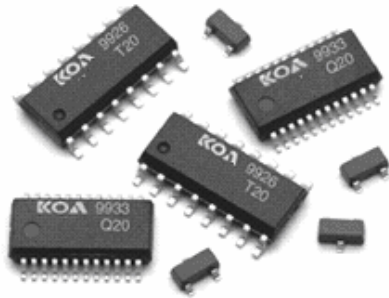
Standard Packages Available:

QSOP / WSOIC / NSOIC

Ordering Information:

RBA	Q	24	L	TEB	XXX	J	H
Circuit Type	Package	Pins	Terminals	Packaging	Value	Tolerance	TCR
	Q = QSOP	08	L = SnPb	13" reel	Std. EIA	J = $\pm 5\%$	± 100 ppm
	W = WSOIC	14	T = Tin	embossed	value	G = $\pm 2\%$	
	N = NSOIC	16		tape	code		
		20					
		24					
					101 = 100 ohms		

SCSI & ECL Termination Networks



Features:

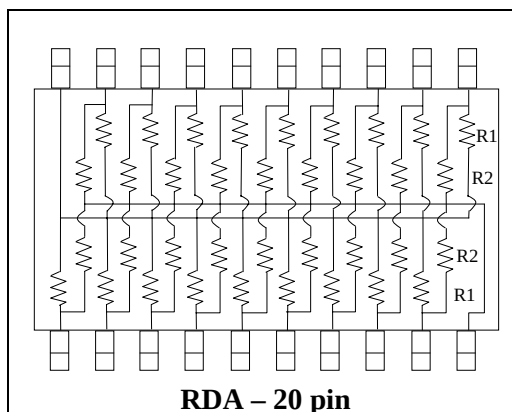
- Thin Film Construction
- Surface Mount Package
- Stable Resistor Technology
- High Resistor Density
- Application Specific Design

Applications:

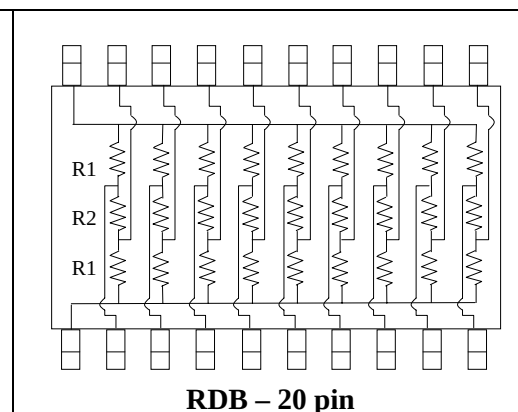
- ECL Signal Termination
- SCSI Signal Termination

Schematics:

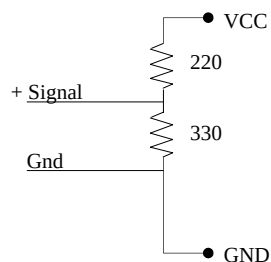
ECL Terminator



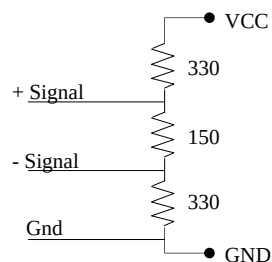
SCSI Terminator



Application: (ECL Termination)



(SCSI Termination)



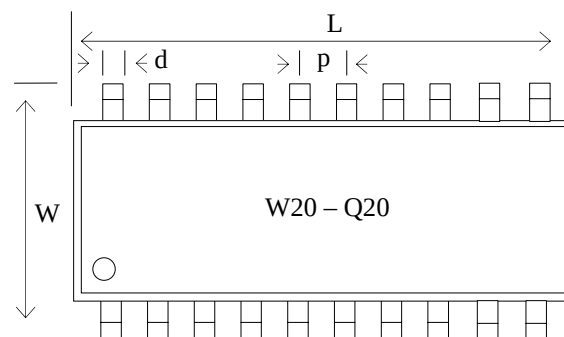
Specifications:

Resistor Tolerance	$\pm 5\%$
Temperature Coefficient (ppm/ $^{\circ}\text{C}$)	± 100
Value Range (ohms)	10 ~ 10,000
Maximum Working Voltage (volts)	100
Resistor Power Rating (70°C)	50mW
Operating Temp. Range ($^{\circ}\text{C}$)	-50 ~ +125

Environmental:

Test Name	Test Condition	Spec.
Resistor to Soldering Heat	MIL-R-55342 4.7.7	$\pm 0.2\%$
Short Time Overload	MIL-R-55342 4.7.5	+ 0.2%
Moisture Resistance	MIL-STD-202 method 103	$\pm 0.2\%$
Thermal Shock	MIL-STD-202 method 107	$\pm 0.2\%$
H.A.S.T.	2 Atm., 121°C , 96 hrs.	$\pm 0.5\%$

Package Information:



Package Code	Package Power	Number of Pins	$L \pm 0.2$	$W \pm 0.2$	$p \pm 0.1$	Pkg. Height ± 0.2	$d \pm 0.05$
W20	1.2 watts	20	12.70	10.36	1.27	2.40	0.41
Q20	1.0 watts	20	8.66	5.99	0.635	1.60	0.25

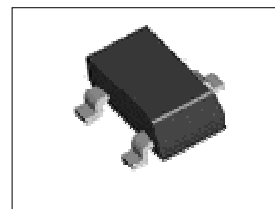
Ordering Information:

RDA	Q20	L	TEB	331 J / 221 J	H
Type RDA RDB	Package W20 = 20 pin Wide SOIC Q20 = 20 pin QSOP	Lead Plating T = 100% Tin L = SnPb	Taping TEB = 13" reel embossed tape	R1 value / R2 value Value = 2 digits + multiplier Tolerance code = J	TCR H = 100ppm

PECL TERMINATOR

Specifications:

Resistor Tolerance	$\pm 1\%$ or $\pm 5\%$
TCR (Std.)	$\pm 100 \text{ ppm}/^{\circ}\text{C}$
TCR Tracking (Min)	$\pm 10 \text{ ppm}/^{\circ}\text{C}$
Working Voltage	100v Max
Insulation Resistance (Min)	$10^{10} \Omega$
Power Rating / Resistor (70°C)	100mW
Operating Temp. Range (°C)	-55 ~ +150

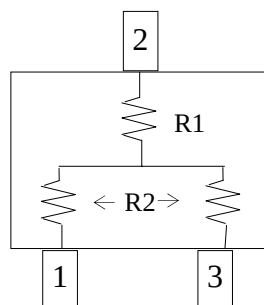


Marking " RTX "

Environmental:

Test Name	Test Condition	Resistor
Resistance to Soldering Heat	MIL-R-55342 π 4.7.7	$\pm 0.25\%$
Short Time Overload	MIL-R-55342 π 4.7.5	+ 0.50%
Moisture Resistance	MIL-STD-202 method 103	$\pm 0.25\%$
Thermal Shock	MIL-STD-202 method 107	$\pm 0.25\%$
Life	MIL-STD-202 method 108	$\pm 0.50\%$
H.A.S.T.	2 Atm., 121°C, 96 hrs.	$\pm 0.50\%$

Schematic: (top view)



Package: SOT-23

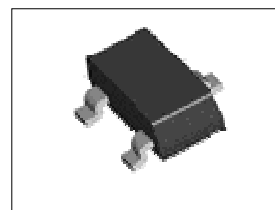
Ordering Information:

RTX	S03	L	TE	XXXX
Series RTX	Package S03 = Sot-23	Lead Finish L = SnPb T = Tin	Packaging TE = 7" reel embossed tape	Value Code Specifies the customer defined Values, Tolerance, and TCR characteristics. Generated by KOA

Precision Voltage Divider

Specifications:

Resistor Tolerance	$\pm 0.1\% \sim \pm 1\%$
Ratio Tolerance	$\pm 0.1\% \sim \pm 1\%$
TCR (ppm/ $^{\circ}\text{C}$)	$\pm 25 \sim \pm 100\text{ppm}$
TCR Tracking (ppm/ $^{\circ}\text{C}$)	$\pm 5 \text{ ppm Min.}$
Working Voltage (volts)	100v Max
Insulation Resistance (ohms)	$10^{10} \Omega \text{ Min}$
Power Rating / Resistor (70°C)	100mW
Operating Temp. Range ($^{\circ}\text{C}$)	$-55 \sim +150$

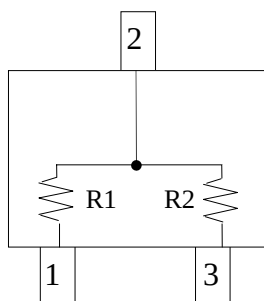


marking “ RTY “

Environmental:

Test Name	Test Condition	Resistor
Resistance to Soldering Heat	MIL-R-55342 π 4.7.7	$\pm 0.25\%$
Short Time Overload	MIL-R-55342 π 4.7.5	$\pm 0.50\%$
Moisture Resistance	MIL-STD-202 method 103	$\pm 0.25\%$
Thermal Shock	MIL-STD-202 method 107	$\pm 0.25\%$
Life	MIL-STD-202 method 108	$\pm 0.50\%$
H.A.S.T.	2 Atm., 121°C , 96 hrs.	$\pm 0.50\%$

Schematic: (top view)



Package: SOT-23

Ordering Information:

RTY

Series
RTY

S03

Package
S03 =
Sot-23

L

Lead Finish
L =
SnPb

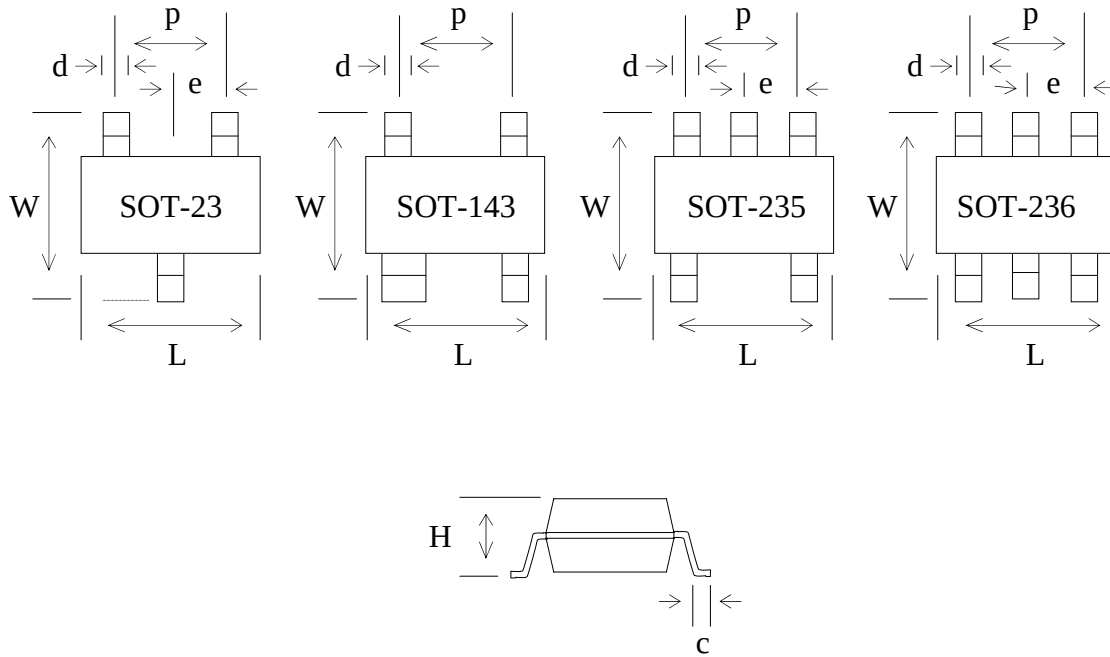
TE

Packaging
TE = 7"
reel embossed
tape

XXXX

Value Code
Specifies the customer defined
Values, Tolerance, and TCR
characteristics. Generated by KOA

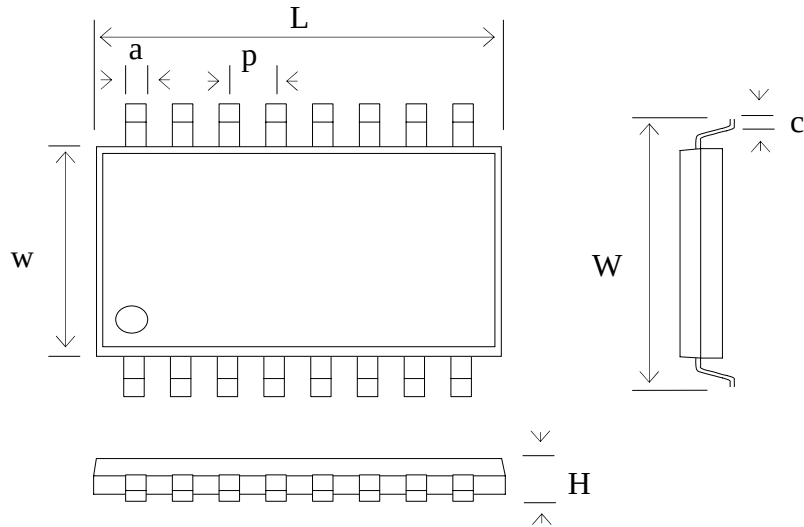
Package Options



Dimensions in (mm) :

Package Symbol	Package	Number of Pins	$L \pm 0.2$	$W \pm 0.2$	$H \pm 0.2$	$p \pm 0.1$	$e \pm 0.1$	$c \pm 0.1$	$d \pm 0.05$
S03	SOT-23	3	2.92	2.30	0.95	1.91	0.95	0.53	0.43
S14	SOT-143	4	2.92	2.30	0.95	1.91	-	0.53	0.43
S35	SOT-235	5	2.92	2.30	0.95	1.91	0.95	0.53	0.43
S36	SOT-236	6	2.92	2.80	0.95	1.91	0.95	0.53	0.43

Package Options



Dimensions in (mm):

Package Symbol	Package	Number of Pins	$L \pm 0.2$	$W \pm 0.2$	$w \pm 0.2$	$H \pm 0.2$	$p \pm 0.1$	$a \pm 0.1$	$c \pm 0.1$
Q16	QSOP	16	4.90	5.99	3.81	1.60	0.635	0.25	0.66
Q20	QSOP	20	8.66	5.99	3.81	1.60	0.635	0.25	0.66
Q24	QSOP	24	8.66	5.99	3.81	1.60	0.635	0.25	0.66
Q28	QSOP	28	10.00	5.99	3.81	1.60	0.635	0.25	0.66
M08	MSOP	08	3.00	4.88	3.00	1.00	0.650	0.30	0.66
N08	SOIC-N	08	4.83	5.99	3.81	1.60	1.27	0.41	0.66
N14	SOIC-N	14	8.66	5.99	3.81	1.60	1.27	0.41	0.66
N16	SOIC-N	16	9.91	5.99	3.81	1.60	1.27	0.41	0.66
W16	SOIC-W	16	10.44	10.36	7.62	2.40	1.27	0.41	0.66
W20	SOIC-W	20	12.70	10.36	7.62	2.40	1.27	0.41	0.66

Technology Focus

What we excel in !

Application Specific Circuits Requiring the

Integration of :

- Thin Film Resistors (1%, 5%, 10%)
- Thin Film Capacitors (10%, 20%)
- Small Signal Diodes (low capacitance, switching, detection, and ESD suppression)
- ESD Diodes
- TVS Diodes
- Small Signal Switching Transistors

Capabilities

Technology that can be integrated

Resistors (TaN)

Value Range ----- $10\ \Omega \sim 1\text{Meg}\ \Omega$

Tolerance ----- +/- 10%, 5%, 1%,

TCR ----- +/- 100 ppm

TCR Matching ----- +/- 5 ppm

Diodes

Schottky

Bipolar

Zener

TVS

Capacitors (dielectric = silicon oxide / silicon nitride)

Value Range : $10\text{pF} \sim 500\ \text{pF}$

Tolerance : +/- 10% , +/- 20%

Transistors

* Small signal

switching

NPN

PNP

Packaging Roadmap

