

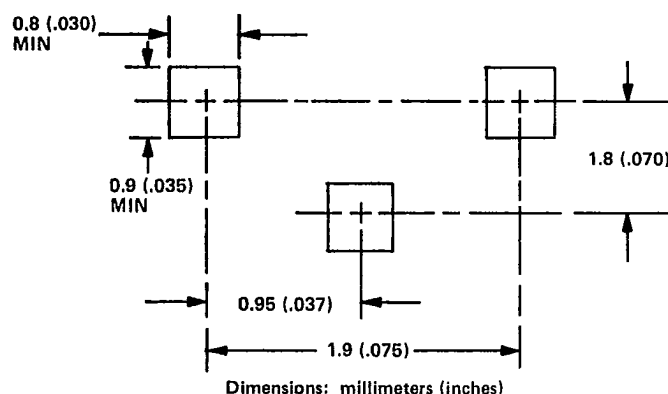
SOT-23 PACKAGED DEVICES

FEATURES

- For Thick and Thin-Film Circuits
- Hyperabrupt Tuning Diodes
- PIN RF Switching Diodes
- Low Cost Microminiature Plastic Package

SUGGESTED MOUNTING METHOD

1. Use the following land configuration on thin or thick-film ceramic substrates.



2. Apply the Solder Paste to the Lands

- a. Alpha Metals RA2211 B80 62 Sn/36 Pb/2Ag, eutectic solder paste containing the necessary flux is recommended.
- b. Screen paste onto lands to a maximum thickness of .005".
- c. Alternatively, the substrate may be tinned by dipping into a 60/40 solder bath.

3. Assemble Parts on the Substrate

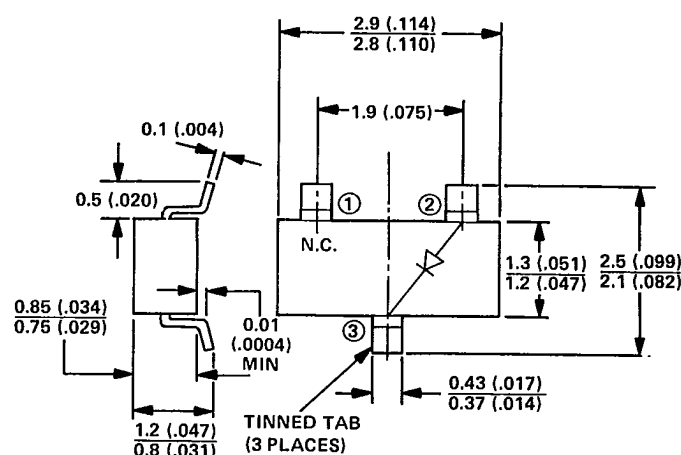
The SOT-23 devices are placed in position with tweezers. The solder paste or the fluxed tabs are tacky enough to hold them in place.

4 Attachment

- a. Reflow soldering is superior. Care must be taken to insure that the maximum tab temperature does not

exceed 275°C and that the body temperature does not exceed 250°C.

- b. A two-step soldering cycle is recommended with a 165°C preheat for 10 seconds followed by a 275°C soldering cycle of 12 second duration.
- c. Alternatives are a 275°C 14 second soldering cycle, immersion soldering in a 235°C bath for 5 seconds maximum followed immediately by forced cooling, or hand soldering using a miniature soldering iron (use extreme care to avoid damage).



Marking: Last two digits of part number of package.

ABSOLUTE MAXIMUM RATINGS

SYMBOL	PARAMETER	VALUE	UNIT
V_R	REVERSE VOLTAGE	SAME AS V_{BR}	VOLTS
I_F	FORWARD CURRENT	100	mA
P_d	POWER DISSIPATION (NOTE 1) @ $T_A = 25^\circ\text{C}$ DERATE ABOVE 25°C	120 1.6	mW mW/°C
T_j	JUNCTION TEMPERATURE	-65 TO +85	°C
T_{stg}	STORAGE TEMPERATURE	-65 TO +100	°C

NOTE 1: MOUNTED ON CERAMIC SUBSTRATE

TUNING VARACTORS

FREQUENCY SOURCES
SEMICONDUCTOR DIVISION

SOT-23 PACKAGED DEVICES

HYPERABRUPT TUNING DIODES - ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

MODEL NUMBER	C_T DIODE CAPACITANCE (pF) $f = 1 \text{ MHz}$		T_R TUNING RATIO $f = 1 \text{ MHz}$ $C(3V)/C(25V)$	Q $V_R = 3 \text{ Vdc}$ $f = 50 \text{ MHz}$	V_{BR} (Vdc) $I_R = 10 \mu\text{A}$	I_R (nA) $V_R = 28 \text{ Vdc}$	TYPICAL CHARACTERISTICS (NOTE 1)
	$V_R = 3 \text{ Vdc}$ MIN/TYP/MAX	$V_R = 25 \text{ Vdc}$ MIN/TYP/MAX					
			TYP	MIN/TYP	MIN	MAX	TYPE
KV31S1	9.5/11.5/14.5	1.8/2.3/2.8	-/5/-	200/400	30	50	KV3201
KV38S2	26/29/32	4.3/5.1/6.0	5.0/5.7/6.5	200/280	30	50	KV3901

NOTE 1: SEE CURVES FOR GIVEN TYPE IN ECONOMY HYPERABRUPT SECTION OF CATALOG.

PIN RF SWITCHING DIODE - ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

MODEL NUMBER	DIODE CAPACITANCE $f = 1.0 \text{ MHz}$		SERIES RESISTANCE $f = 50 \text{ MHz}$		EFFECTIVE MINORITY CARRIER LIFETIME (μSEC) $I_F = 10 \text{ mA}$ $I_R = 2 \text{ mA}$ TYP	V_R REVERSE BREAKDOWN VOLTAGE $I_R = 10 \mu\text{A}$ MIN	REVERSE LEAKAGE CURRENT		FORWARD VOLTAGE		TYPICAL CHARACTERISTICS (NOTE 1) TYPE
	C_T (pF) TYP/MAX	V_R (Vdc)	R_S (OHMS) TYP/MAX	I_F (mA)			I_R (nA) MAX	V_R (Vdc)	V_F (Vdc) MAX	I_F (mA)	
KS35A2	0.8/1.0	20	0.5/0.7	5	0.5	35	100	20	1.2	100	KS3542

NOTE 1: SEE CURVES FOR GIVEN TYPE IN SMALL SIGNAL PIN DIODE SECTION OF CATALOG.

PERFORMANCE

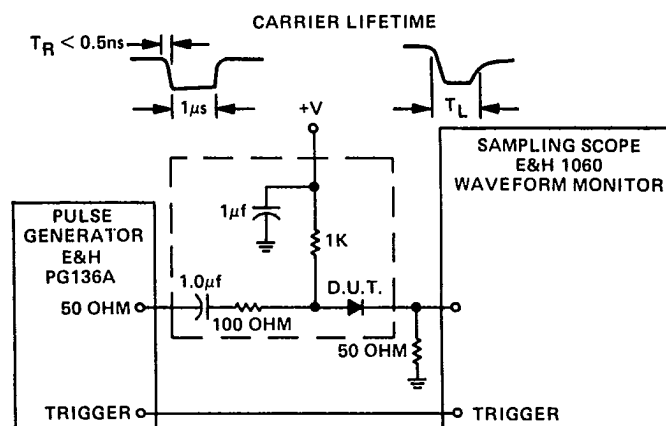


Figure 1