

SURFACE MOUNT TRENCH SCHOTTKY RECTIFIER

Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ Metal silicon junction, majority carrier conduction
- ◆ High efficiency operation
- ◆ Ultra low forward voltage drop, low power losses
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed:
260°C/10 seconds at terminals

Mechanical Data

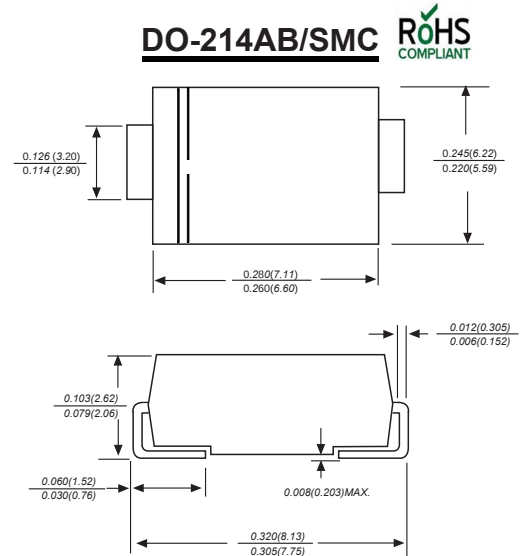
Case : SMC

Terminals : Solder plated, solderable per MIL-STD-750, Method 2026

Polarity : Polarity symbol marking on body

Mounting Position : Any

Weight : 217mg / 0.0077oz



Dimensions in inches and (millimeters)

Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

Parameter	SYMBOLS	ST54C	ST56C	ST510C	UNITS
Marking Code		MDD ST54C	MDD ST56C	MDD ST510C	
Maximum repetitive peak reverse voltage	V_{RRM}	40	60	100	V
Maximum RMS voltage	V_{RMS}	28	42	70	V
Maximum DC blocking voltage	V_{DC}	40	60	100	V
Maximum average forward rectified current 0.375" (9.5mm) lead length (see fig.1)	I_{AV}	5.0			A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	150			A
Maximum instantaneous forward voltage at 5.0A	V_F	0.45	0.50	0.60	V
Maximum DC reverse current at rated DC blocking voltage $T_A=25^{\circ}C$ $T_A=125^{\circ}C$	I_R	0.5 50			mA
Typical junction capacitance (NOTE 1)	C_J	500			pF
Typical thermal resistance (NOTE 2)	$R_{\theta JA}$	60			$^{\circ}C/W$
Operating junction temperature range	T_J	-55 to +125			$^{\circ}C$
Operating storage temperature range	T_{STG}	-55 to +150			$^{\circ}C$

Note: 1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

2. Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length, P.C.B. mounted

Ratings And Characteristic Curves

Fig.1 Forward Current Derating Curve

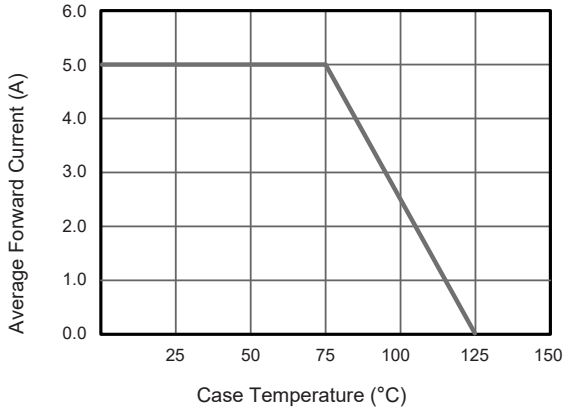


Fig.2 Typical Reverse Characteristics

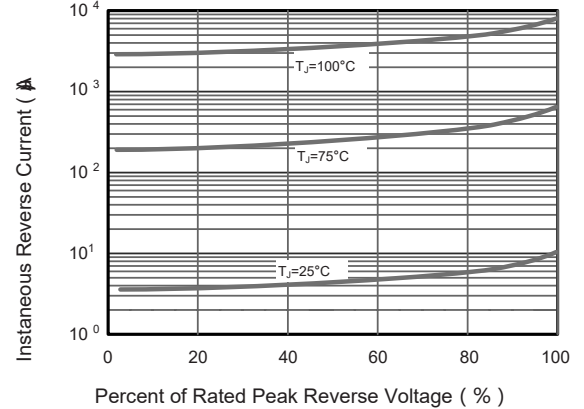


Fig.3 Typical Forward Characteristic

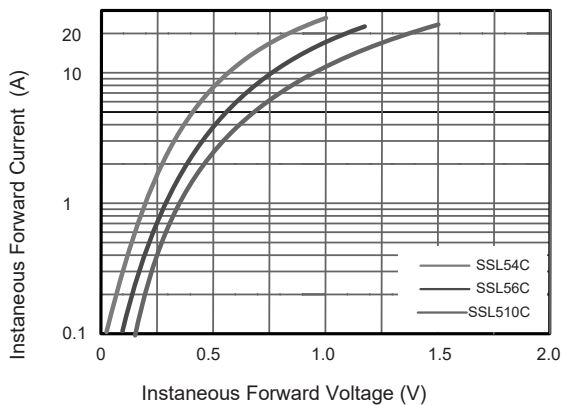


Fig.4 Typical Junction Capacitance

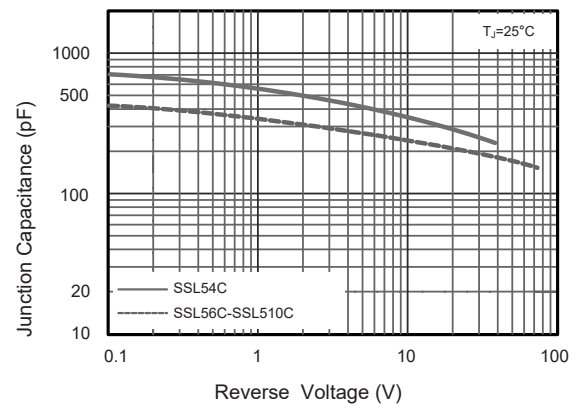


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

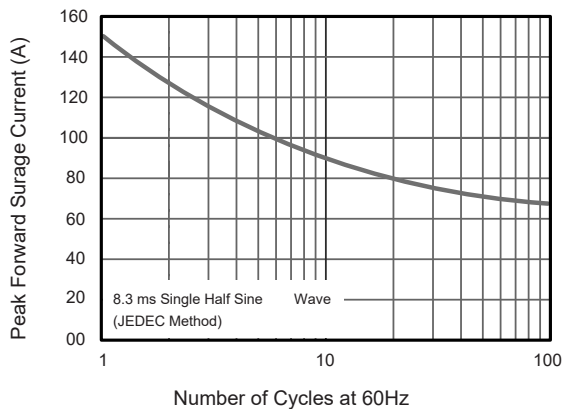
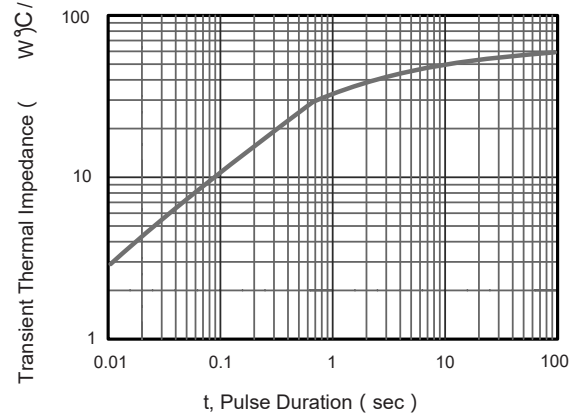
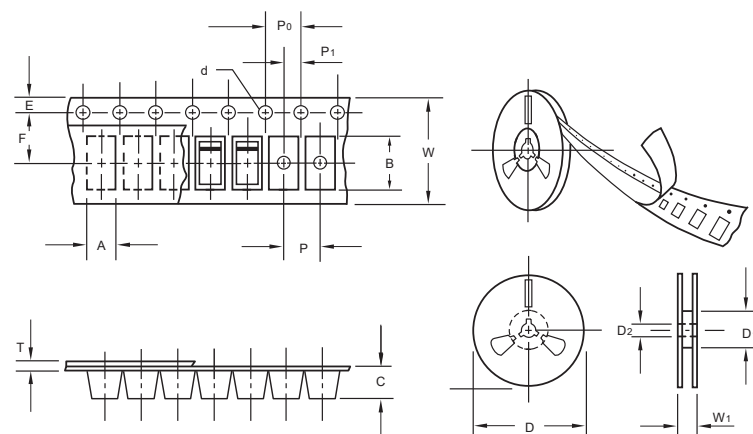


Fig.6- Typical Transient Thermal Impedance



The curve above is for reference only.

Packing information



unit:mm

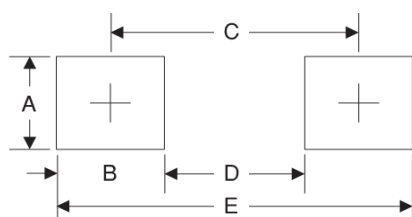
Item	Symbol	Tolerance	SMC
Carrier width	A	0.1	6.15
Carrier length	B	0.1	8.41
Carrier depth	C	0.1	2.42
Sprocket hole	d	0.05	1.50
13" Reel outside diameter	D	2.0	330.00
13" Reel inner diameter	D1	min	50.00
Feed hole diameter	D2	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	7.50
Punch hole pitch	P	0.1	8.00
Sprocket hole pitch	P0	0.1	4.00
Embossment center	P1	0.1	2.00
Overall tape thickness	T	0.1	0.25
Tape width	W	0.3	16.00
Reel width	W1	1.0	16.50

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (mm)	BOX (pcs)	INNER BOX (mm)	REEL DIA, (mm)	CARTON SIZE (mm)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SMC	13"	3,000	4.0	6000	190*190*41	330	365*365*340	42000	14.0

Suggested Pad Layout



Symbol	Unit (mm)	Unit (inch)
A	4.3	0.170
B	4.1	0.160
C	7.9	0.311
D	3.8	0.150
E	12	0.472

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