

Surface Mount Schottky Barrier Rectifier



DO-214AC (SMA)

FEATURES

- Low profile package
- Ideal for automated placement
- Low forward voltage drop, low power losses
- High efficiency
- High surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C



RoHS
COMPLIANT
HALOGEN
FREE

TYPICAL APPLICATIONS

For use in low voltage, high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

Note

- These devices are not AEC-Q101 qualified

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	3.0 A
V_{RRM}	20 V, 30 V, 40 V
I_{FSM}	50 A
V_F at $I_F = 3.0$ A	0.32 V
T_J max.	150 °C

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	DT32E	DT33E	DT34E	UNIT
Device marking code					
Maximum repetitive peak reverse voltage	V_{RRM}	20	30	40	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	3.0			A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	50			A
Voltage rate of change (rated V_R)	dV/dt	10 000			V/ μ s
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150			°C

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	$I_F = 3\text{ A}$	$T_A = 25\text{ }^{\circ}\text{C}$	$V_F^{(1)}$	0.32	0.38	V
Reverse current	Rated V_R	$T_A = 25\text{ }^{\circ}\text{C}$	$I_R^{(2)}$	13	200	μA
		$T_A = 100\text{ }^{\circ}\text{C}$		0.1	0.5	mA
Typical junction capacitance	4.0 V, 1 MHz		C_J	135	-	pF

Notes

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

(2) Pulse test: Pulse width $\leq 40\text{ ms}$

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	DT32E	DT33E	DT34E	UNIT
Typical thermal resistance	R _{θJA} ⁽¹⁾	67			°C/W
	R _{θJL} ⁽¹⁾	8			

Note

(1) P.C.B. mounted with 0.4" x 0.4" (10 mm x 10 mm) copper pad areas

RATINGS AND CHARACTERISTICS CURVES

($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

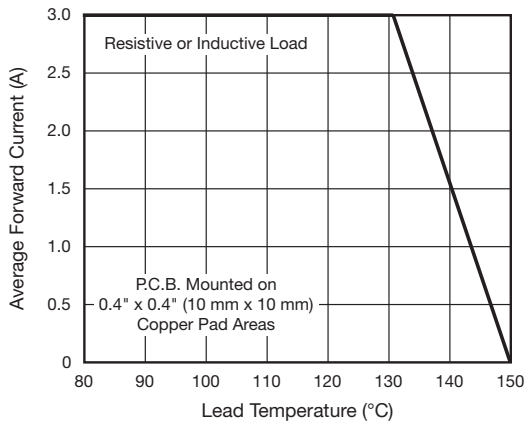


Fig. 1 - Forward Current Derating Curve

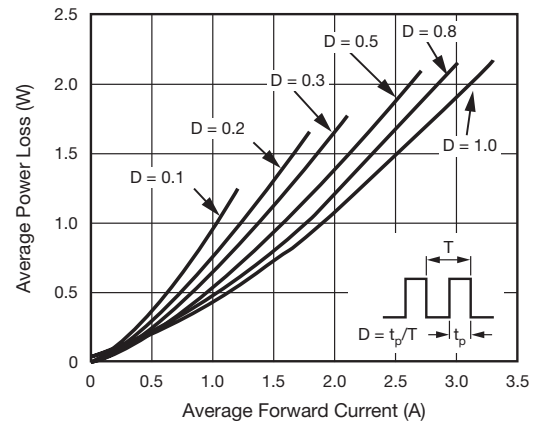


Fig. 2 - Forward Power Loss Characteristics

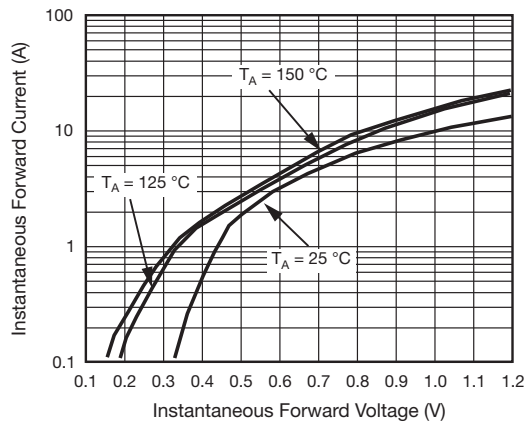


Fig. 3 - Typical Instantaneous Forward Characteristics

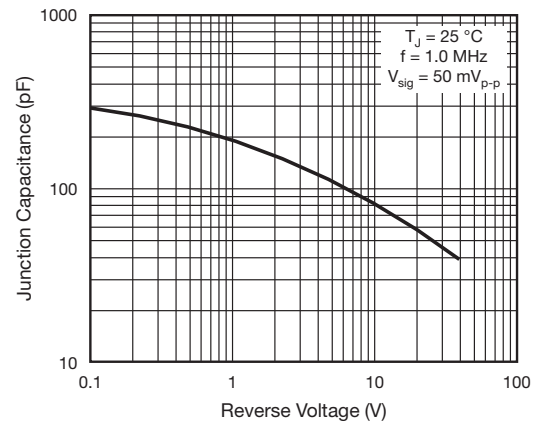


Fig. 5 - Typical Junction Capacitance

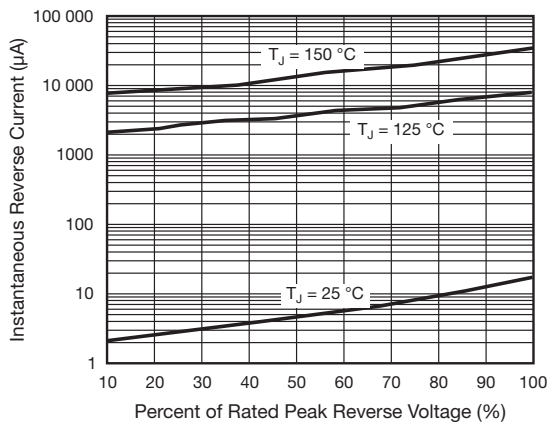
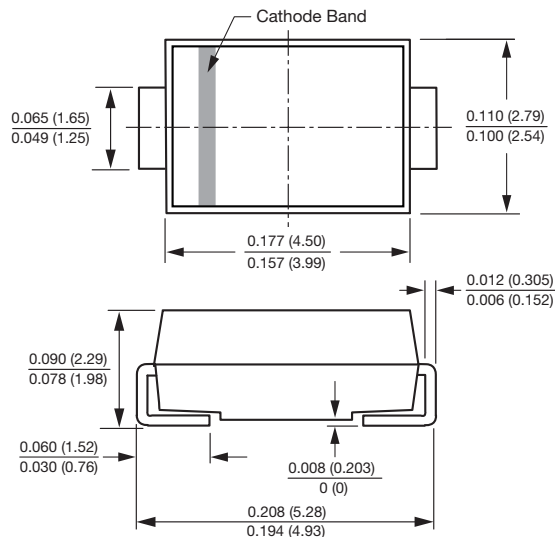


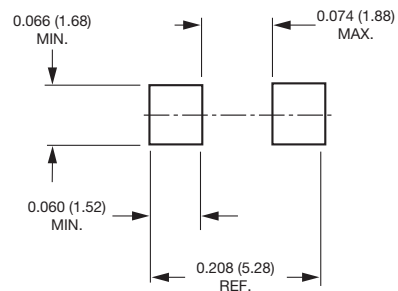
Fig. 4 - Typical Reverse Leakage Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

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Mounting Pad Layout



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