

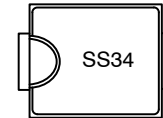
## SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER



DO-214AB (SMC)



### MARKING DIAGRAMS



PRODUCT SUMMARY	
Package	SMC
$I_{F(AV)}$	3.0 A
$V_R$	40 V
$V_F$ at $I_F$	0.43 V
$I_{RM}$ max.	35 mA at 125 °C
$T_J$ max.	150 °C
Diode variation	Single die
$E_{AS}$	6.0 mJ

### ORDERING INFORMATION

Device	Package	Shipping <sup>†</sup>
SS34	SMC (Pb-Free)	3000 / Tape & Reel

MAJOR RATINGS AND CHARACTERISTICS			
SYMBOL	CHARACTERISTICS	VALUES	UNITS
$I_{F(AV)}$	Rectangular waveform	3.0	A
$V_{RRM}$		40	V
$I_{FSM}$	$t_p = 5 \mu s$ sine	1580	A
$V_F$	3.0 A <sub>pk</sub> , $T_J = 125 \text{ °C}$	0.43	V
$T_J$	Range	-55 to +150	°C

VOLTAGE RATINGS			
PARAMETER	SYMBOL	VS-MBRS340-M3	UNITS
Maximum DC reverse voltage	$V_R$	40	V
Maximum working peak reverse voltage	$V_{RWM}$		

ABSOLUTE MAXIMUM RATINGS				
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS
Maximum average forward current	$I_{F(AV)}$	50 % duty cycle at $T_L = 118 \text{ °C}$ , rectangular waveform	3.0	A
		50 % duty cycle at $T_L = 110 \text{ °C}$ , rectangular waveform	4.0	
Maximum peak one cycle non-repetitive surge current	$I_{FSM}$	5 $\mu s$ sine or 3 $\mu s$ rect. pulse	1580	
		10 ms sine or 6 ms rect. pulse	80	
Non-repetitive avalanche energy	$E_{AS}$	$T_J = 25 \text{ °C}$ , $I_{AS} = 1.0 \text{ A}$ , $L = 12 \text{ mH}$	6	mJ
Repetitive avalanche current	$I_{AR}$	Current decaying linearly to zero in 1 $\mu s$ Frequency limited by $T_J$ maximum $V_A = 1.5 \times V_R$ typical	1.0	A

ELECTRICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum forward voltage drop	$V_{FM}^{(1)}$	3 A	$T_J = 25\text{ °C}$	0.525	V
		6 A		0.68	
		3 A	$T_J = 125\text{ °C}$	0.43	
		6 A		0.57	
Maximum reverse leakage current	$I_{RM}^{(1)}$	$T_J = 25\text{ °C}$	$V_R = \text{Rated } V_R$	2.0	mA
		$T_J = 100\text{ °C}$		20	
		$T_J = 125\text{ °C}$		35	
Maximum junction capacitance	$C_T$	$V_R = 5\text{ V}_{DC}$ (test signal range 100 kHz to 1 MHz), $25\text{ °C}$		230	pF
Typical series inductance	$L_S$	Measured lead to lead 5 mm from package body		3.0	nH
Maximum voltage rate of change	dV/dt	Rated $V_R$		10 000	V/ $\mu$ s

**Note**

<sup>(1)</sup> Pulse width < 300  $\mu$ s, duty cycle < 2 %

THERMAL - MECHANICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum junction and storage temperature range	$T_J^{(1)}, T_{Stg}$			-55 to +150	$^{\circ}\text{C}$
Maximum thermal resistance, junction to lead	$R_{thJL}^{(2)}$	DC operation		12	$^{\circ}\text{C/W}$
Maximum thermal resistance, junction to ambient	$R_{thJA}$			46	
Approximate weight				0.24	g
				0.008	oz.
Marking device		Case style SMC (similar to DO-214AB)		34	

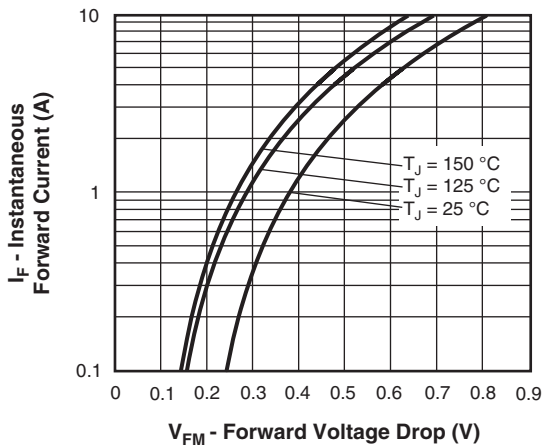


Fig. 1 - Maximum Forward Voltage Drop Characteristics (Per Leg)

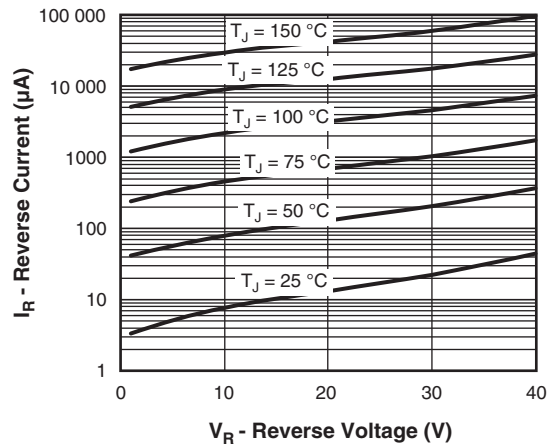


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage (Per Leg)

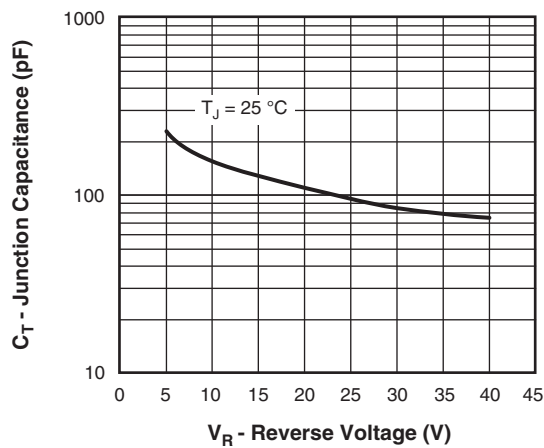


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage (Per Leg)

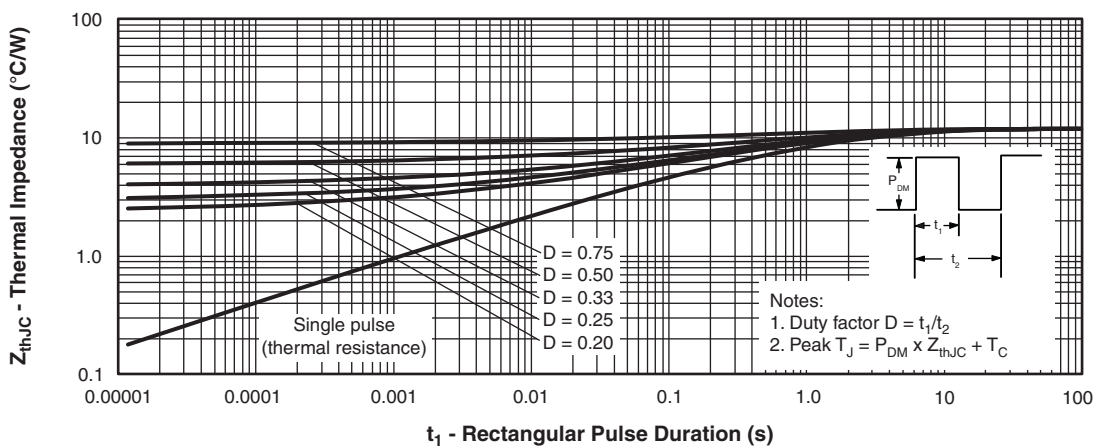


Fig. 4 - Maximum Thermal Impedance  $Z_{thJC}$  Characteristics (Per Leg)

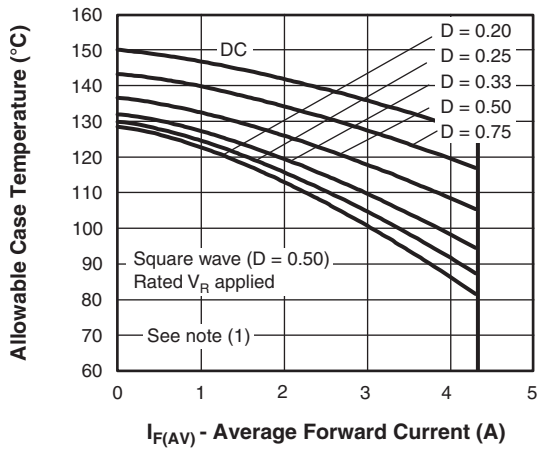


Fig. 5 - Maximum Average Forward Current vs. Allowable Lead Temperature

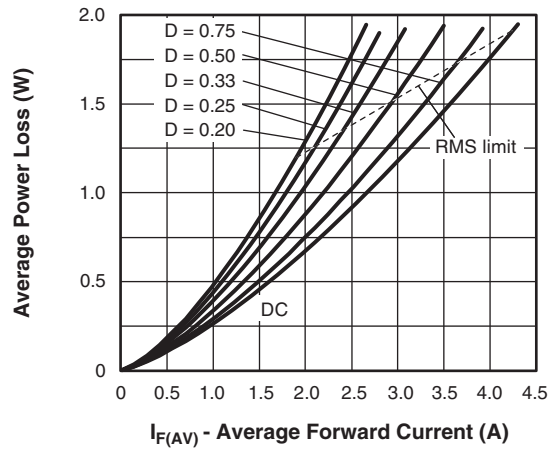


Fig. 6 - Maximum Average Forward Dissipation vs. Average Forward Current

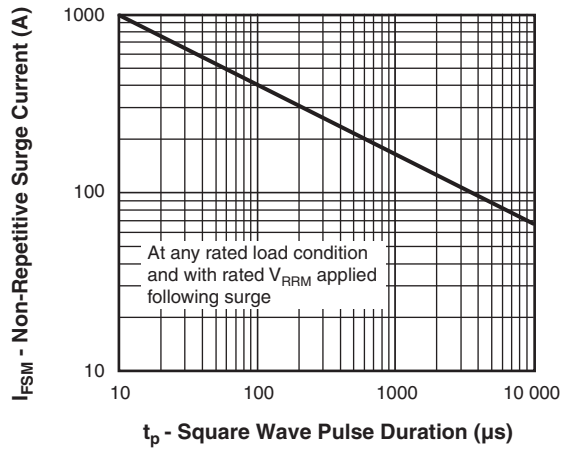
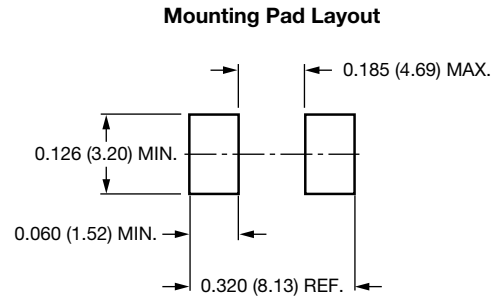
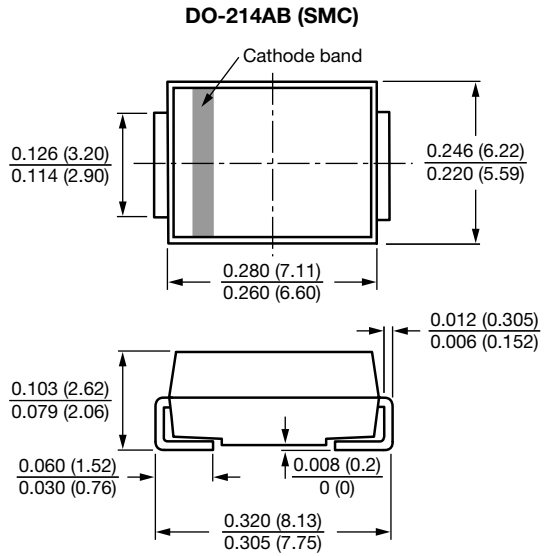


Fig. 7 - Maximum Peak Surge Forward Current vs. Pulse Duration

**DIMENSIONS** in inches (millimeters)



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