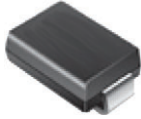
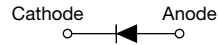


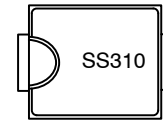
SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER



SMC



MARKING DIAGRAMS



PRODUCT SUMMARY	
Package	SMC
$I_{F(AV)}$	3.0 A
V_R	100 V
V_F at I_F	0.62 V
I_{RM}	5 mA at 125 °C
T_J max.	175 °C
Diode variation	Single die
E_{AS}	3.0 mJ

ORDERING INFORMATION

Device	Package	Shipping [†]
SS310	SMC (Pb-Free)	3000 / Tape & Reel

MAJOR RATINGS AND CHARACTERISTICS			
SYMBOL	CHARACTERISTICS	VALUES	UNITS
$I_{F(AV)}$	Rectangular waveform	3.0	A
V_{RRM}		100	V
I_{FSM}	$t_p = 5 \mu s$ sine	800	A
V_F	$3.0 A_{pk}$, $T_J = 125 \text{ °C}$	0.62	V
T_J	Range	-55 to +175	°C

VOLTAGE RATINGS			
PARAMETER	SYMBOL	VS-30BQ100-M3	UNITS
Maximum DC reverse voltage	V_R	100	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 $T_L = 148 \text{ °C}$, rectangular waveform	3.0	A
		50 % duty cycle at $T_L = 138 \text{ °C}$, rectangular waveform	4.0	
Maximum peak one cycle non-repetitive surge current	I_{FSM}	5 μs sine or 3 μs rect. pulse	800	
		10 ms sine or 6 ms rect. pulse	70	
Non-repetitive avalanche energy	E_{AS}	$T_J = 25 \text{ °C}$, $I_{AS} = 1.0 \text{ A}$, $L = 6 \text{ mH}$	3.0	mJ
Repetitive avalanche current	I_{AR}	Current decaying linearly to zero in 1 μs Frequency limited by T_J maximum $V_A = 1.5 \times V_R$ typical	0.5	A

ELECTRICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum forward voltage drop	$V_{FM}^{(1)}$	3 A	$T_J = 25\text{ }^\circ\text{C}$	0.79	V
		6 A		0.90	
		3 A	$T_J = 125\text{ }^\circ\text{C}$	0.62	
		6 A		0.70	
Maximum reverse leakage current	I_{RM}	$T_J = 25\text{ }^\circ\text{C}$	$V_R = \text{Rated } V_R$	0.5	mA
		$T_J = 125\text{ }^\circ\text{C}$		5.0	
Maximum junction capacitance	C_T	$V_R = 5\text{ }V_{DC}$ (test signal range 100 kHz to 1 MHz), $25\text{ }^\circ\text{C}$		115	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/ μs

Note

(1) Pulse width = 300 μs , 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 +175	$^\circ\text{C}$
Maximum thermal resistance, junction to lead	R_{thJL}	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)		3J	

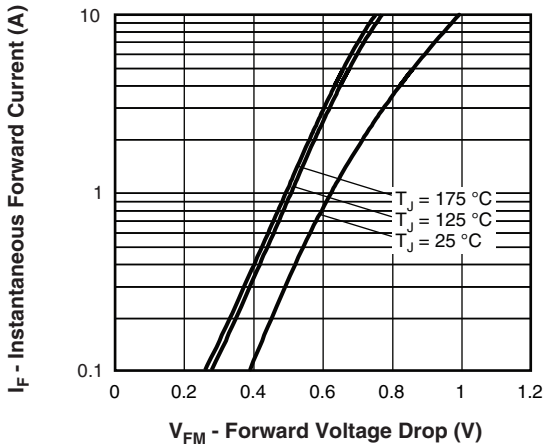


Fig. 1 - Maximum Forward Voltage Drop Characteristics (Per Leg)

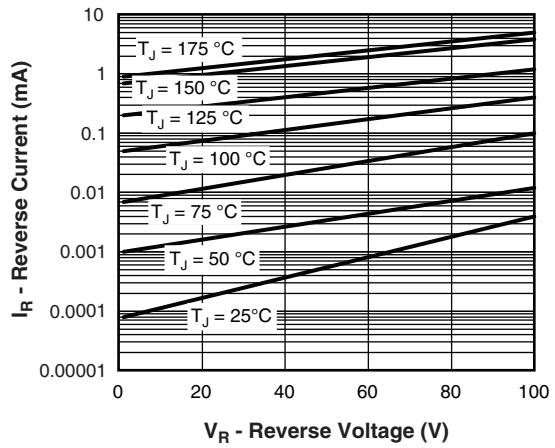


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage (Per Leg)

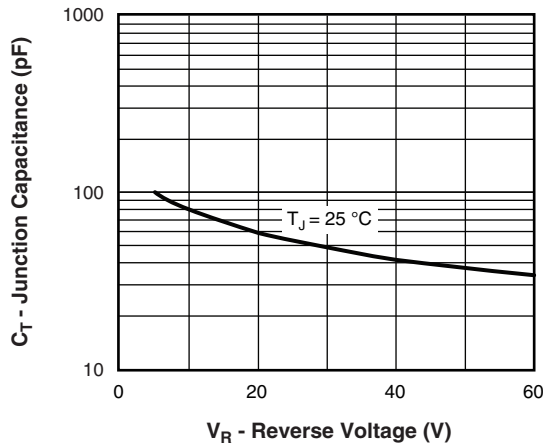


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage (Per Leg)

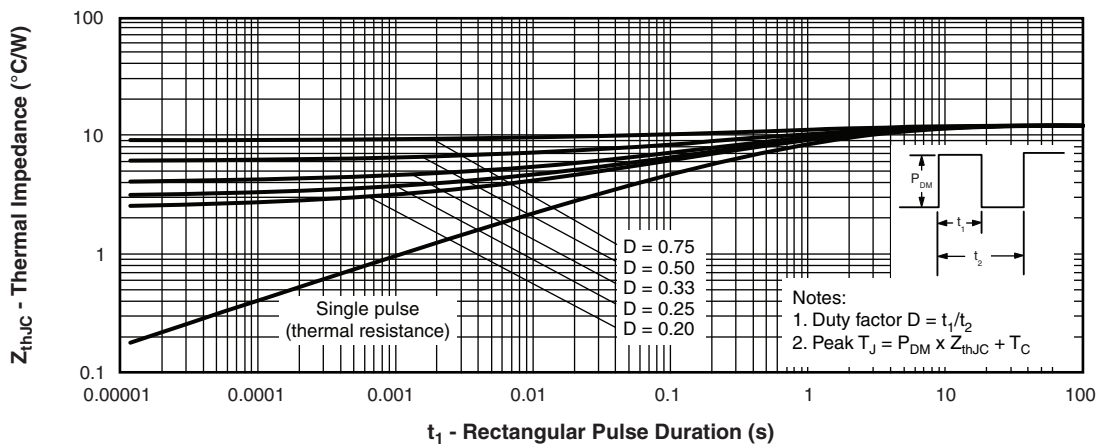


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics (Per Leg)

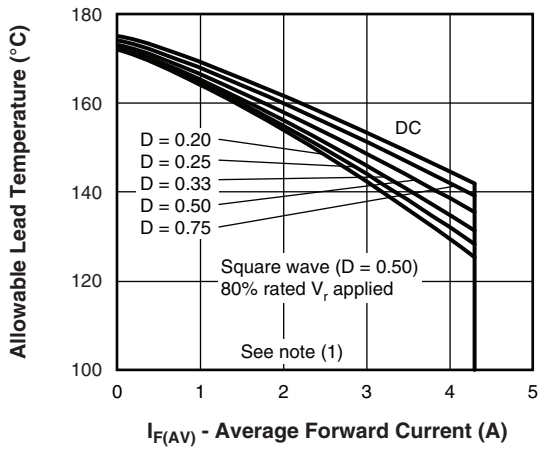


Fig. 5 - Maximum Average Forward Current vs. Allowable Lead Temperature

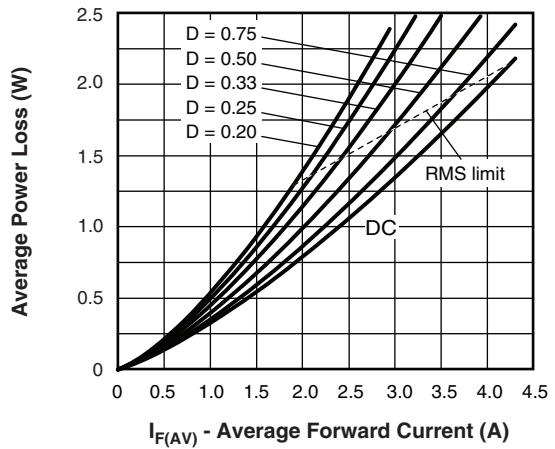


Fig. 6 - Maximum Average Forward Dissipation vs. Average Forward Current

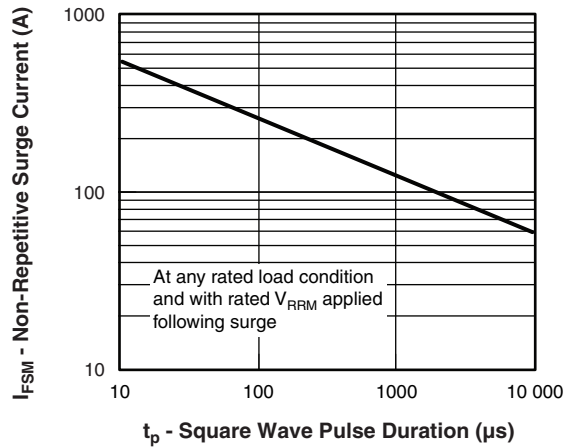


Fig. 7 - Maximum Peak Surge Forward Current vs. Pulse Duration

DIMENSIONS in inches (millimeters)

