EVVOSEMI®
THINK CHANGE DO

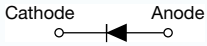
ESD TVS MOS LDO Diode Sensor DC-DC

Product Specification

Domestic Part Number	EV30BQ100-S7
Overseas Part Number	30BQ100
Equivalent Part Number	30BQ100

"S7" means SMC

SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER



SMC

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

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 µs sine	800	A
V_F	3.0 A_{pk}, T_J = 125 °C	0.62	V
T_J	Range	-55 to +175	°C

VOLTAGE RATINGS			
PARAMETER	**SYMBOL**	**30BQ100UNITS**	
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 °C, rectangular waveform		3.0	A
		50 % duty cycle at T_L = 138 °C, rectangular waveform		4.0	
Maximum peak one cycle non-repetitive surge current	I_{FSM}	5 µs sine or 3 µs rect. pulse	Following any rated load condition and with rated V_{RRM} applied	800	
		10 ms sine or 6 ms rect. pulse		70	
Non-repetitive avalanche energy	E_{AS}	T_J = 25 °C, I_{AS} = 1.0 A, L = 6 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 x 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 °C	0.79	V
		6 A		0.90	
		3 A	T_J = 125 °C	0.62	
		6 A		0.70	
Maximum reverse leakage current	I_{RM}	T_J = 25 °C	V_R = Rated V_R	0.5	mA
		T_J = 125 °C		5.0	
Maximum junction capacitance	C_T	V_R = 5 V_{DC} (test signal range 100 kHz to 1 MHz), 25 °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	°C
Maximum thermal resistance, junction to lead	R_{thJL}	DC operation	12	°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	

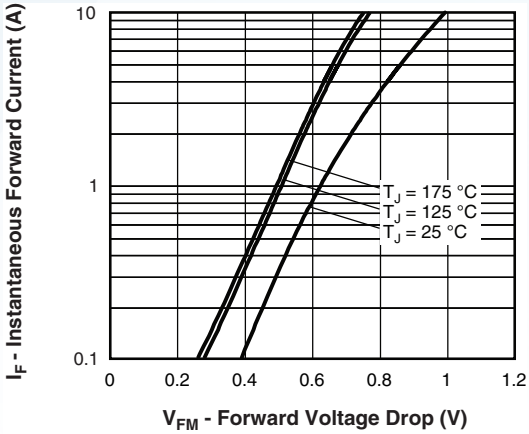


Fig. 1 - Maximum Forward Voltage Drop Characteristics (Per Leg)

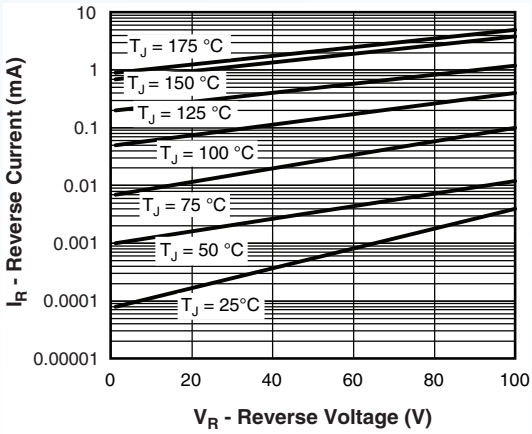


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage (Per Leg)

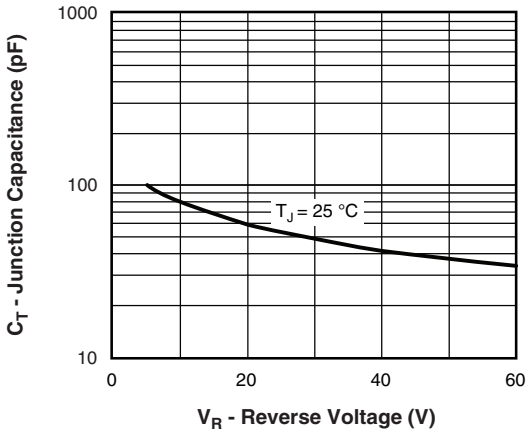


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage (Per Leg)

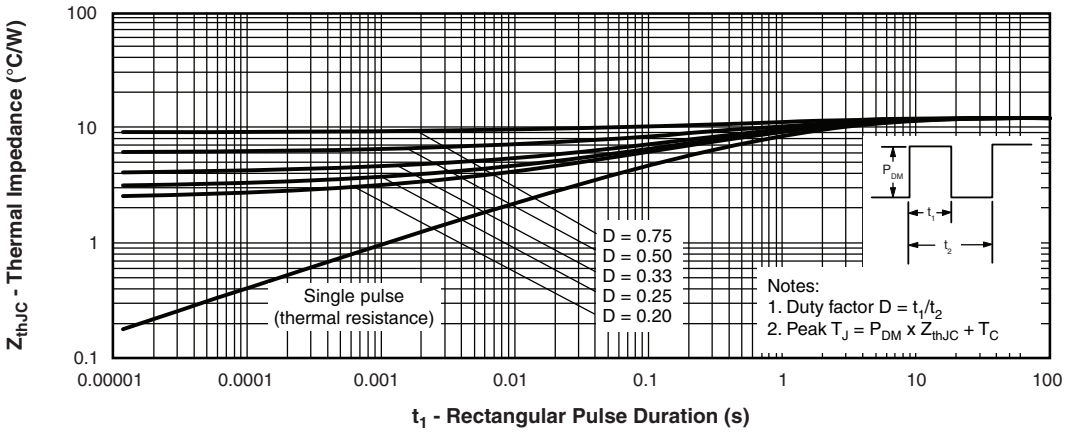


Fig. 4 - Maximum Thermal Impedance Z_{thJC} Characteristics (Per Leg)

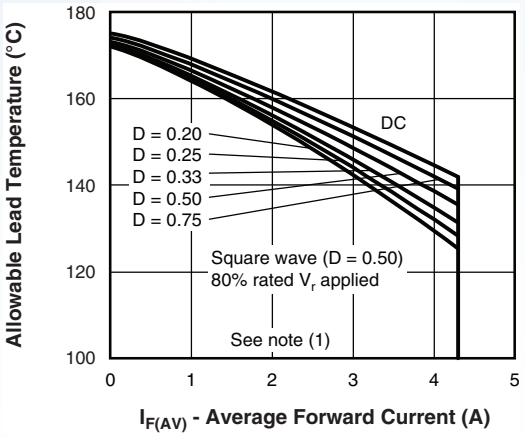


Fig. 5 - Maximum Average Forward Current vs. Allowable Lead Temperature

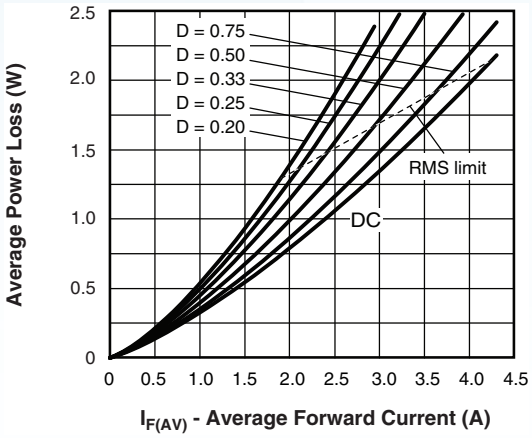


Fig. 6 - Maximum Average Forward Dissipation vs. Average Forward Current

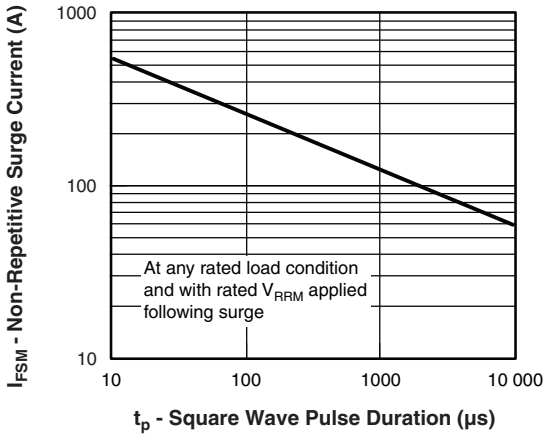
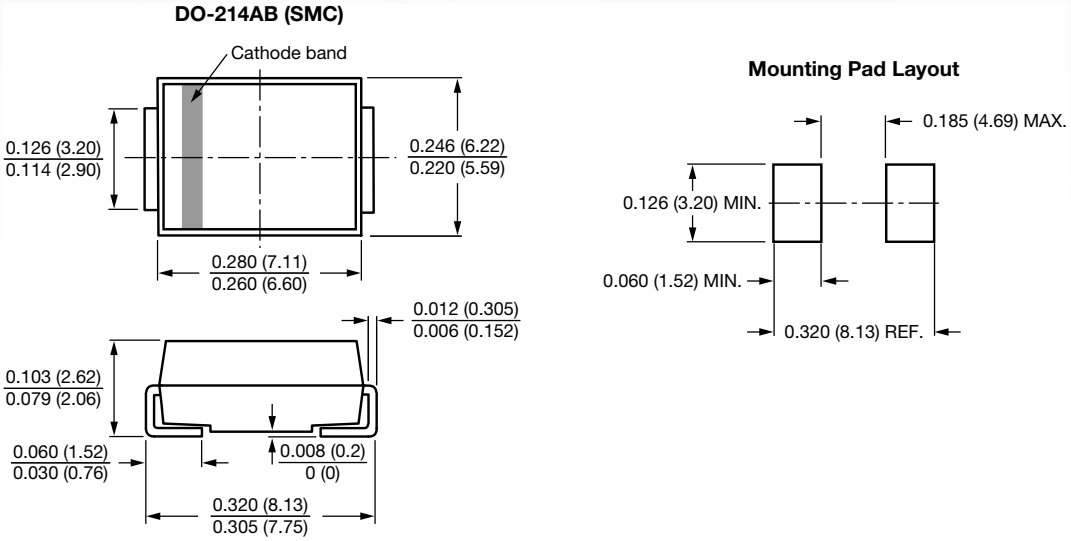


Fig. 7 - Maximum Peak Surge Forward Current vs. Pulse Duration

DIMENSIONS in inches (millimeters)



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