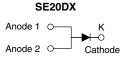
Vishay General Semiconductor

Surface-Mount Low V_F Standard Rectifiers



www.vishay.com



LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS					
I _{F(AV)}	20 A				
V _{RRM}	400 V, 600 V				
I _{FSM}	200 A				
V_F at I_F = 20 A (T_A = 125 °C)	0.85 V				
T _J max.	175 °C				
Package	SMPD (TO-263AC)				
Circuit configuration	Single				

FEATURES

- Very low profile typical height of 1.7 mm
- Low forward voltage drop
- AEC-Q101 qualified available
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C



RoHS

COMPLIANT

HALOGEN

FREE

AUTOMOTIVE

• Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

TYPICAL APPLICATIONS

General purpose, power line polarity protection, in both consumer and automotive applications.

MECHANICAL DATA

Case: SMPD (TO-263AC)

Molding compound meets UL 94 V-0 flammability rating Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

Base P/NHM3 - halogen-free, RoHS-compliant, and AEC-Q101 gualified

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 and HM3 suffix meet JESD 201 class 2 whisker test

Polarity: as marked

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)						
PARAMETER	SYMBOL	SE20DLG	SE20DLJ	UNIT		
Device marking code		SE20DLG	SE20DLJ			
Maximum repetitive peak reverse voltage	V _{RRM}	400	600	V		
Maximum DC forward current	I _F ⁽¹⁾	20		A		
Maximum DC forward current	I _F ⁽²⁾	3.9				
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I _{FSM}	200		A		
Operating junction and storage temperature range	T _J , T _{STG} ⁽³⁾	-55 to +175		°C		

Notes

⁽¹⁾ Mounted on infinite heatsink

⁽²⁾ Free air, mounted on recommended copper pad area

 $^{(3)}$ The heat generated must be less than the thermal conductivity from junction to ambient dP_D/dT_J < R_{thJA}



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ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage	I _F = 10 A	– T _A = 25 °C		0.86	-	V	
	I _F = 20 A		V _F (1)	0.95	1		
	I _F = 10 A	– T _A = 125 °C	VF	0.73	-		
	I _F = 20 A			0.85	0.9		
Reverse current	Rated V _B	T _A = 25 °C	L_ (2)	-	5	μA	
	naleu v _R	T _A = 125 °C		13	100		
Typical reverse recovery time	I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A		t _{rr}	330	-	ns	
Typical junction capacitance	4.0 V, 1 MHz		CJ	160	-	pF	

Notes

 $^{(1)}\,$ Pulse test: 300 μs pulse width, 1 % duty cycle

⁽²⁾ Pulse test: Pulse width \leq 40 ms

THERMAL CHARACTERISTICS ($T_A = 25$ °c unless otherwise noted)					
PARAMETER	SYMBOL	SE20DLG	SE20DLJ	UNIT	
Typical thermal registeres	R _{0JA} (1)(2)	55			
Typical thermal resistance	R _{0JM} ⁽³⁾	1		°C/W	

Notes

⁽¹⁾ The heat generated must be less than the thermal conductivity from junction-to-ambient: $dP_D/dT_J < 1/R_{\theta JA}$

(2) Free air, mounted on recommended PCB, 2 oz. pad area; thermal resistance R_{0,JA} - junction to ambient to follow JEDEC® 51-2A

⁽³⁾ Mounted on infinite heatsink thermal resistance R_{thJM} - junction to mount to follow JEDEC[®] 51-14 transient dual interface test method (TDIM)

ORDERING INFORMATION (Example)						
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
SE20DLJ-M3/I	0.543	I	2000/reel	13" diameter plastic tape and reel		
SE20DLJHM3/I ⁽¹⁾	0.543	I	2000/reel	13" diameter plastic tape and reel		

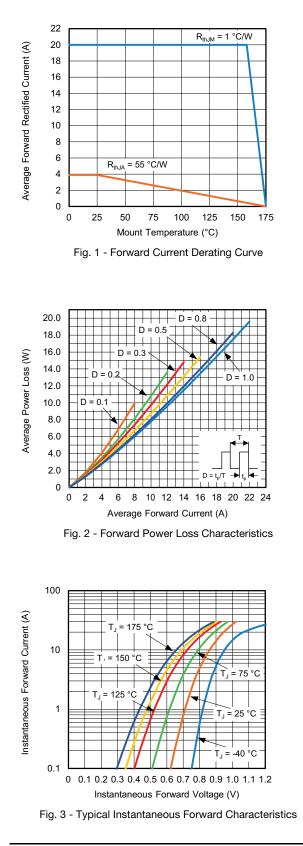
Note

⁽¹⁾ AEC-Q101 qualified



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RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)



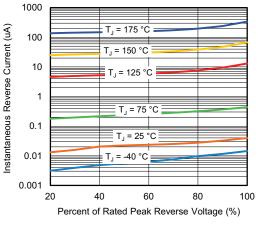
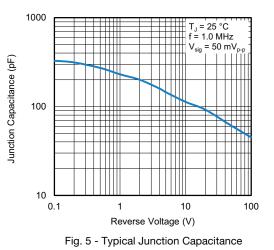
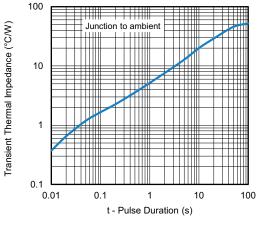
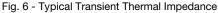


Fig. 4 - Typical Reverse Leakage Characteristics







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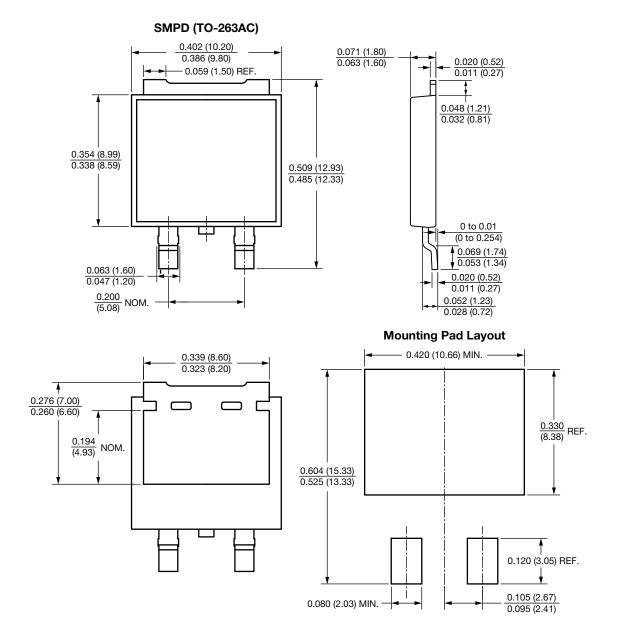
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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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