

1A,50-600V Superfast Rectifiers

Features

- Low leakage current
- Low forward voltage drop
- Glass passivated chip junction
- Moisture sensitivity: level 1, per J-STD-020
- Halogen-free according to IEC 61249-2-21 definition
- High temperature soldering guaranteed: 260°C/10 seconds



SMA(DO-214AC)

Applications

For use in secondary rectification and freewheeling for superfast switching speeds of converters in consumer applications.

Maximum Ratings & Electrical Characteristics (T _A =25°C unless otherwise noted)									
Parameter	Symbol	ES1A	ES1B	ES1C	ES1D	ES1F	ES1G	ES1J	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	50	100	150	200	300	400	600	V
Maximum RMS voltage	V _{RMS}	35	70	105	140	210	280	420	V
Maximum DC blocking voltage	V _{DC}	50	100	150	200	300	400	600	V
Maximum average forward rectified current	I _{F(AV)}	1							A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load per diode	I _{FSM}	30							A
Operating junction temperature range	T _J	-55 to +150							°C
Storage temperature range	T _{STG}	-55 to +150							°C

Thermal-Mechanical Specifications (T _A =25°C unless otherwise noted)			
Parameter	Symbol	Typ	Unit
Thermal Resistance, Junction to Ambient	R _{θJA}	90	°C / W
Thermal Resistance, Junction to Case	R _{θJC}	20	°C / W
Thermal Resistance, Junction to Lead	R _{θJL}	25	°C / W

Electrical Specifications ($T_A=25^{\circ}\text{C}$ unless otherwise noted)											
Parameter	Symbol	Test Conditions	ES1A	ES1B	ES1C	ES1D	ES1F	ES1G	ES1J	Unit	
Forward Drop Voltage	V_F	$I_F=1\text{A}$ $T_A=25^{\circ}\text{C}$	0.95				1.30		1.70		V
		$I_F=1\text{A}$ $T_A=125^{\circ}\text{C}$	0.85				0.95		1.15		
Reverse leakage current @ V_R	I_R	$T_J=25^{\circ}\text{C}$	5							uA	
		$T_J=125^{\circ}\text{C}$	100								
Typical junction capacitance	C_J	4.0 V 1 MHz	16.7				10		8.2		pF
Maximum reverse recovery time	t_{rr}	$I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{RR}=0.25\text{A}$	35							nS	

Note:

1. Mounted on copper pad area of 0.2x0.2" (5.0 x 5.0mm) to each terminal.

Ratings and Characteristics Curves

(TA = 25°C unless otherwise noted)

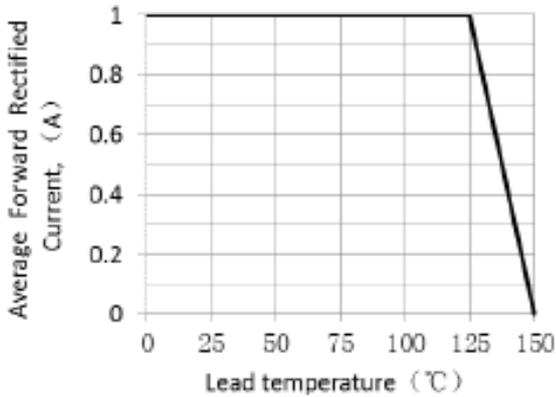


Figure 1. Forward Current Derating Curve

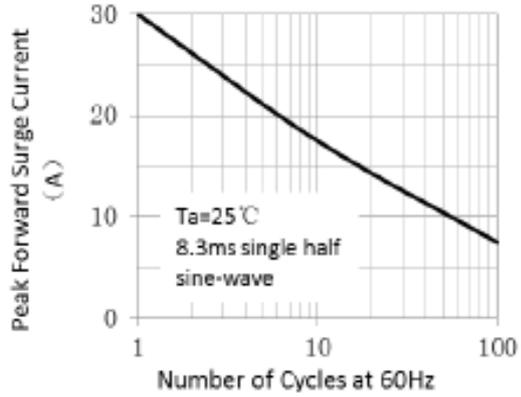


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

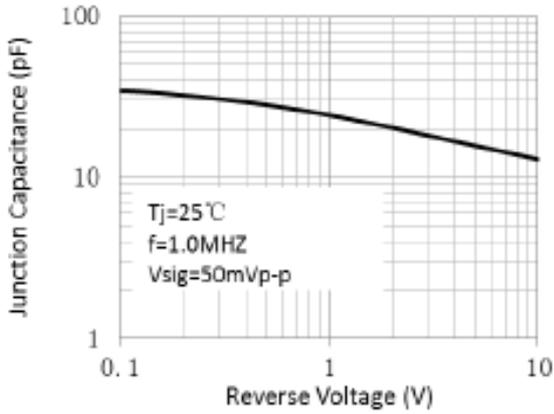


Figure 3. Typical Junction Capacitance

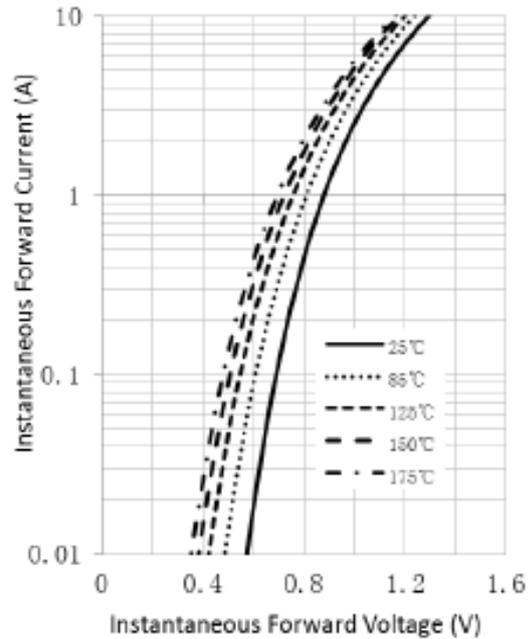


Figure 4. Typical Instantaneous Forward Characteristics

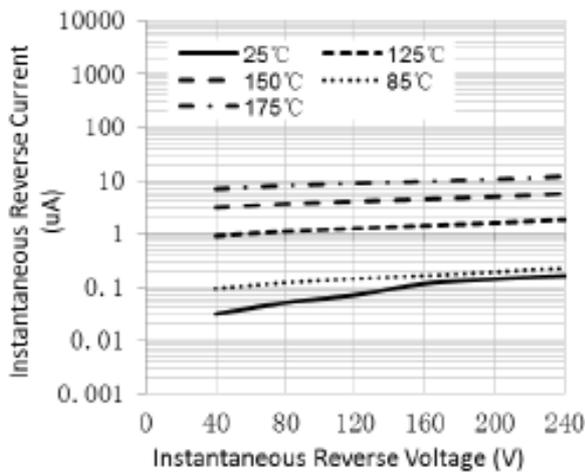
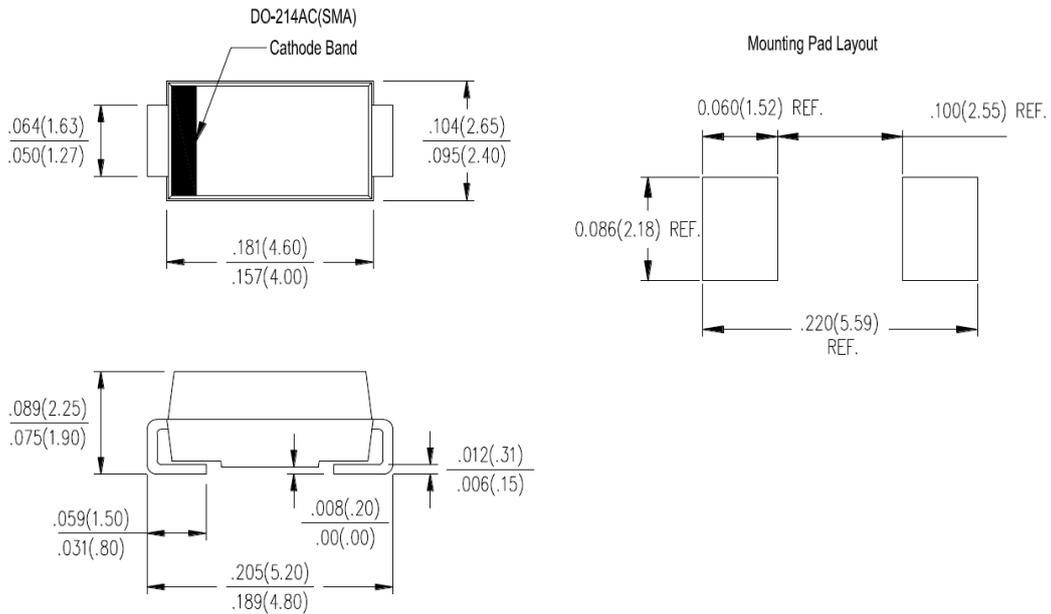


Figure 5. Typical Reverse Characteristics

Package Outline Dimensions

in inches (millimeters)

SMA (DO-214AC)



Revision History

Document Version	Date of release	Description of changes
Rev.A	2021.06.01	Released Datasheet
Rev.B	2023.10.19	Modify document format

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