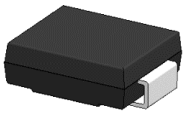
3A,50-600V Superfast Rectifiers

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℃/10 seconds
- AEC-Q101 qualified

RoHS COMPLIANT



SMC (DO-214AB)

Applications

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

Maximum Ratings & Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	AES3A	AES3B	AES3C	AES3D	AES3F	AES3G	AES3J	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	$I_{F(AV)}$	3							A
Peak forward surge current,8.3ms single half sine-wave superimposed on rated load per diode	I_{FSM}	100							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℃ unless otherwise noted)

Parameter	Symbol	Typ	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	65	°C /W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	10	°C /W
Thermal Resistance, Junction to Lead	$R_{\theta JL}$	15	°C /W

Electrical Specifications(T_A=25℃ unless otherwise noted)

Parameter	Symbol	Test Conditions	AES3A	AES3B	AES3C	AES3D	AES3F	AES3G	AES3J	Unit
Forward Drop Voltage	V_F	I_F=3A	0.95				1.30		1.70	V
Reverse leakage current @V_R	I_R	T_J =25℃	10							uA
		T_J =125℃	500							
Typical junction capacitance	C_J	4.0 V 1 MHZ	50				40			pF
Maximum reverse recovery time	trr	I_F=0.5A, I_R=1.0A, I_{RR}=0.25A	35							nS

Note：

1. Mounted on copper pad area of 8.0 x 8.0mm to each terminal.

Ratings and Characteristics Curves

(T_A = 25℃ unless otherwise noted)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

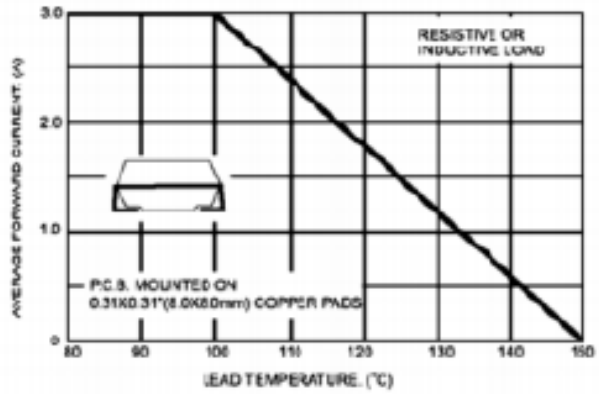


FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

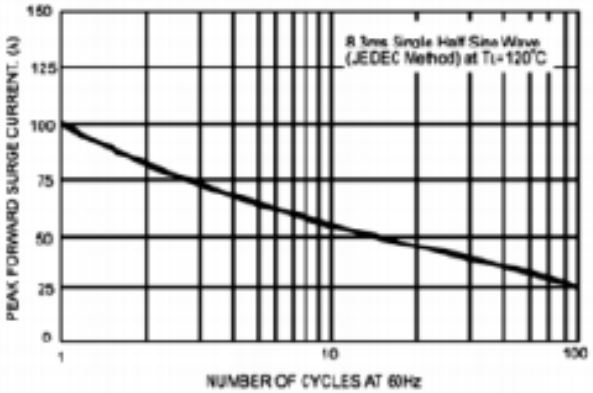


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

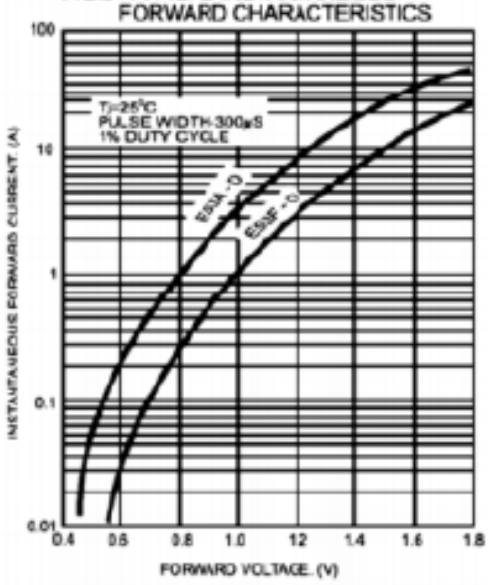


FIG.4- TYPICAL REVERSE CHARACTERISTICS

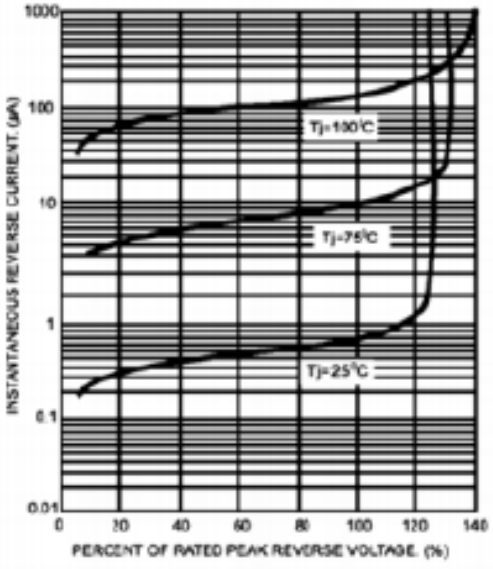
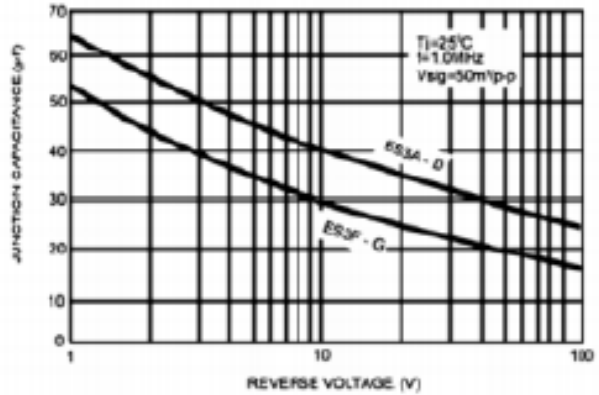


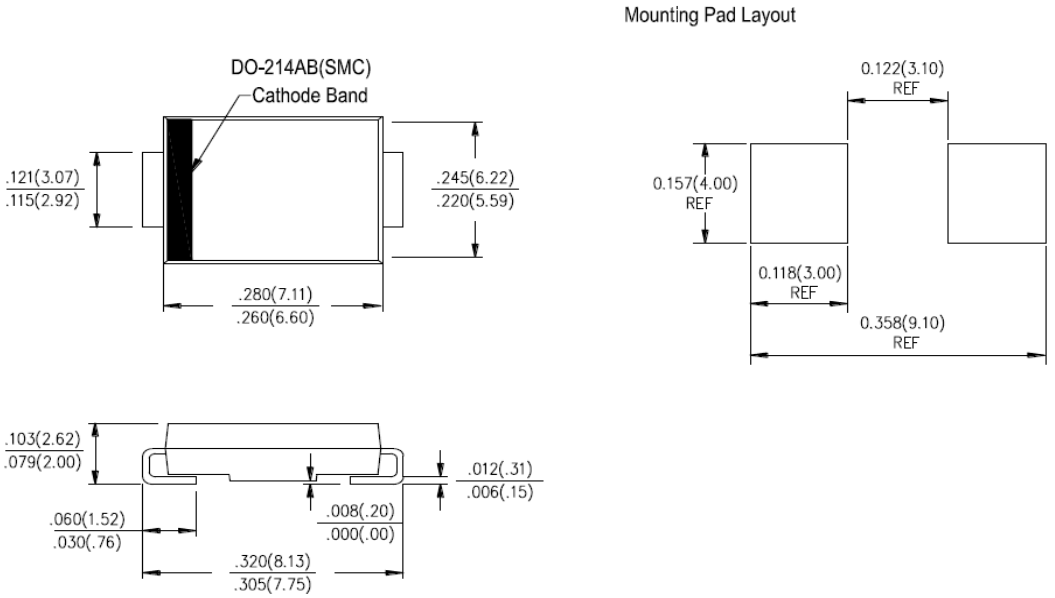
FIG.5- TYPICAL JUNCTION CAPACITANCE



Package Outline Dimensions

in inches (millimeters)

SMC (DO-214AB)



Revision History

Document Version	Date of release	Description of changes
Rev.A	2021.06.01	Released Datasheet
Rev.B	2023.10.24	Modify document format

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