

Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Metal silicon junction ,majority carrier conduction
- Guard ring for overvoltage protection
- Low power loss ,high efficiency
- High current capability ,low forward voltage drop
- High surge capability
- High temperature soldering guaranteed:260°C/10 seconds at terminals
- Component in accordance to RoHS 2015/863/EU
- AEC-Q101 qualified and PPAP capable



AEC-Q101 Qualified

Mechanical Data

- Case: JEDEC SMB(DO-214AA) molded plastic body
- Terminals: Solder Plated, solderable per MIL-STD-750,method 2026
- Polarity: Color band denotes cathode end
- Weight: 0.003ounce, 0.093 gram

SMB(DO-214AA)



Typical Applications

For use in low voltage ,high frequency inverters ,DC/DC converters,
free wheeling ,and polarity protection applications

Marking:

JF:Logo
xxxx:Date code
SS510B-V:Type

Maximum Ratings

(Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	100	V
Maximum average forward rectified current (see fig.1)	$I_F(AV)$	5.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	I_{FSM}	120	A
Operating junction temperature range	T_J	-55 to +150	°C
Storage temperature range	T_{stg}	-55 to +150	°C

Electrical Characteristcs (T_a=25°C Unless Otherwise Noted)

Parameter	Test Conditions		Symbol	Typ.	Max.	Unit
Instaneous forward voltage	T _j =25°C	I _r =1.0A	V _F ¹⁾	0.55	-	V
		I _r =5.0A		0.75	0.82	
	T _j =125°C	I _r =1.0A		0.44	-	
		I _r =5.0A		0.60	-	
Reverse current	T _j =25°C	V _R =100V	I _R ²⁾	-	5.0	μA
	T _j =100°C			-	0.3	mA
	T _j =125°C			-	1.5	
Typical junction capacitance	4V,1MHz		C _J	190		pF

Notes: 1.Pulse test: 300 μs pulse width,1% duty cycle

2.Pulse test: pulse width ≤ 40ms

THERMAL CHARACTERISTICS

Parameter	Symbol	SMB	Unit
Typical thermal resistance ³⁾	R _{θJA}	70.0	°C/W
	R _{θJL}	20.0	

3. Unit mounted on PC board with 5.0mm×5.0 mm (0.013 mm thick) copper pads as heat sink

AVAILABALE PACK INFORMATION

Product code	Pack	Reel Size (mm)	Quantity (pcs/reel)	Box Size L×W×H (mm)	Quantity (reel/box)	Carton Size L×W×H (mm)	Quantity (box/carton)	Quantity (K/carton)
SS510B-V-SMB	T/R	Φ330	3000	330×333×39	2	370×370×360	8	48

Fig.1-Forward Current Derating Curve

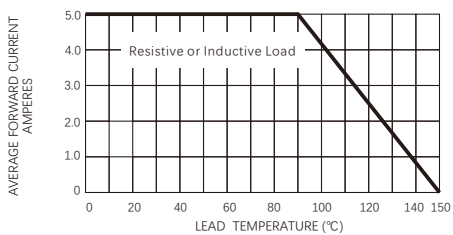


Fig.2-Maximum Non-repetitive Peak Forward Surge Current

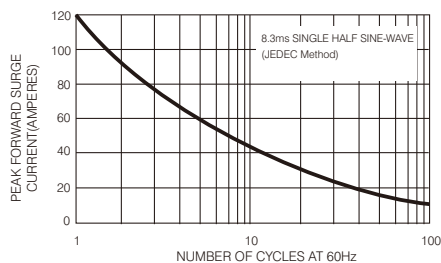


Fig.3-Typical Instantaneous Forward Characteristics

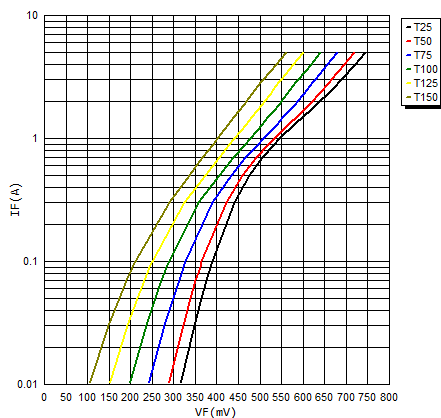


Fig.4-Typical Reverse Characteristics

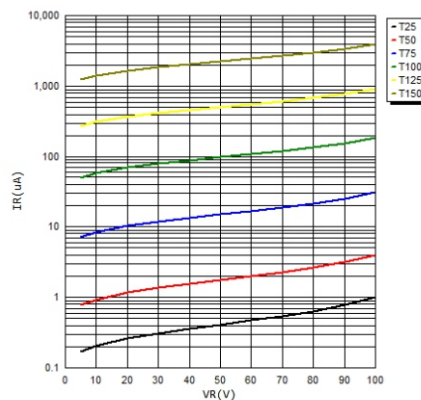
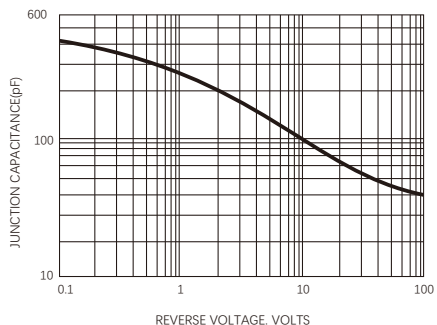
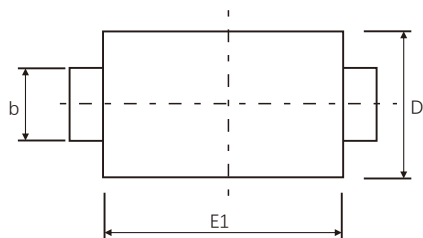


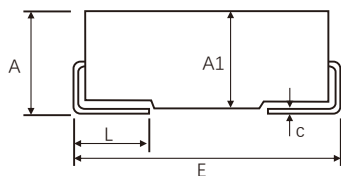
Fig.5-TYPICAL JUNCTION CAPACITANCE



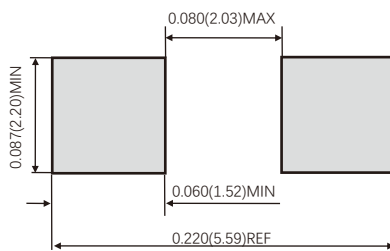
SMB(DO-214AA)



Sym	Value(millimeters)		
	Min	Typ	Max
A	2.13	-	2.44
A1	1.90	-	2.24
b	1.80	-	2.20
c	0.10	-	0.305
D	3.30	-	3.94
E	5.00	-	5.59
E1	4.06	-	4.90
L	0.76	-	1.52



SMB Suggested PAD Layout



Dimensions in inches and (millimeters)

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