

Features

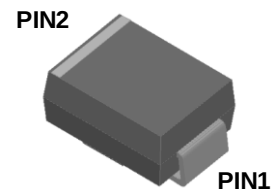
- Positive temperature coefficient
- Temperature-independent switching
- Unipolar devices and zero reverse recovery current
- Zero forward recovery current
- Essentially no switching losses
- Reduction of heat sink requirements
- High-frequency operation
- Reduction of EMI
- Maximum working temperature at 175°C

V_{RRM}	=	1200	V
$I_F (T_C=108^{\circ}\text{C})$	=	2	A
Q_C	=	10.8	nC

Applications

- Power factor correction (PFC)
- Solar inverter
- Uninterruptible power supply
- Motor drives
- Photovoltaic inverter
- Electric car and charger

Package



SMB



Package Pin Definitions

- Pin1 - Anode
- Pin2 - Cathode

Part Number	Package	Marking
ASJD002120MB	SMB	B122

Maximum Ratings($T_c = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Reverse voltage (Repetitive peak) @ $T_j = 25^\circ\text{C}$	V_{RRM}	V	1200
Reverse voltage (Surge peak) @ $T_j = 25^\circ\text{C}$	V_{RSM}	V	1200
Reverse voltage (DC) @ $T_j = 25^\circ\text{C}$	V_{DC}	V	1200
Continuous forward current @ $T_c = 25^\circ\text{C}$	I_F	A	3.1
Continuous forward current @ $T_c = 108^\circ\text{C}$			2
Non-repetitive peak forward surge current @ $T_c = 25^\circ\text{C}$, $t_p = 10\text{ms}$, Half Sine Wave	I_{FSM}	A	16
Power Dissipation @ $T_c = 25^\circ\text{C}$	P_{TOT}	W	10
Power Dissipation @ $T_c = 110^\circ\text{C}$			4.3
i^2t Value @ $T_c = 25^\circ\text{C}$, $t_p = 10\text{ms}$	$\int i^2 dt$	$\text{A}^2 \text{S}$	1.28
Operating junction and Storage temperature range	T_j, T_{stg}	$^\circ\text{C}$	-55 to +175

Electrical Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	Typ.	Max.
Forward voltage drop	V_F	V	$I_F = 2\text{A}$, $T_j = 25^\circ\text{C}$	1.45	1.55
			$I_F = 2\text{A}$, $T_j = 175^\circ\text{C}$	2.2	-
Reverse leakage current	I_R	μA	$V_R = 1200\text{V}$, $T_j = 25^\circ\text{C}$	1	10
			$V_R = 1200\text{V}$, $T_j = 175^\circ\text{C}$	10	-
Total capacitive charge	Q_C	nC	$V_R = 800\text{V}$, $T_j = 25^\circ\text{C}$	10.8	-
Total capacitance	C	pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$	130	-
			$V_R = 400\text{V}$, $f = 1\text{MHz}$	10.5	-
			$V_R = 800\text{V}$, $f = 1\text{MHz}$	8.2	-
Capacitance Stored Energy	E_C	μJ	$V_R = 800\text{V}$	5.4	-

Thermal Characteristics

PARAMETER	SYMBOL	UNIT	VALUE
Thermal resistance	$R_{\theta JC}$	$^\circ\text{C/W}$	15

Typical Performance

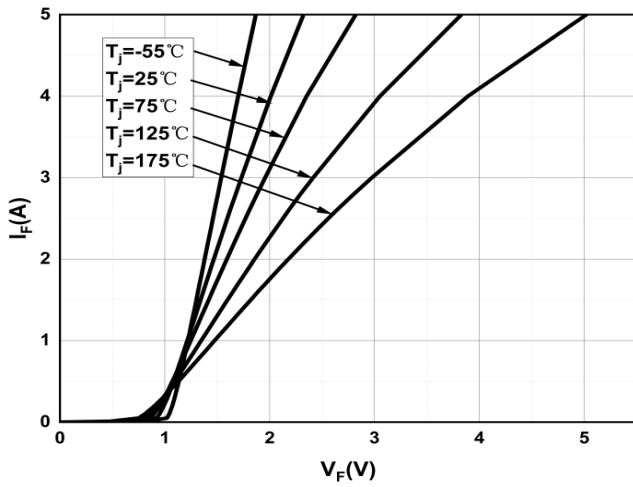


Figure 1. Forward Characteristics

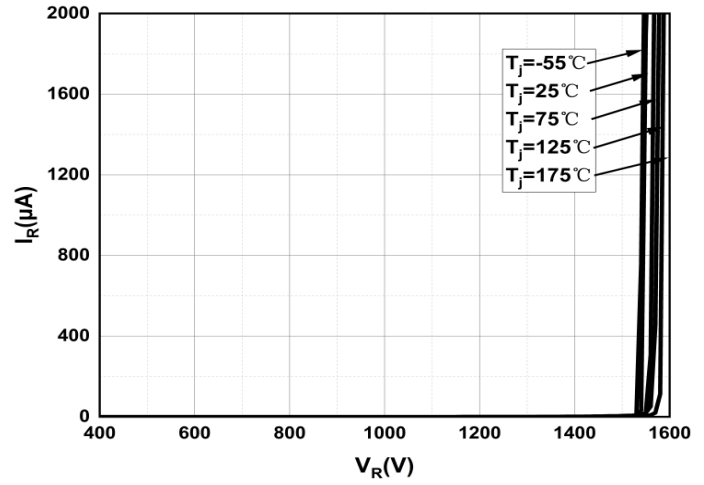


Figure 2. Reverse Characteristics

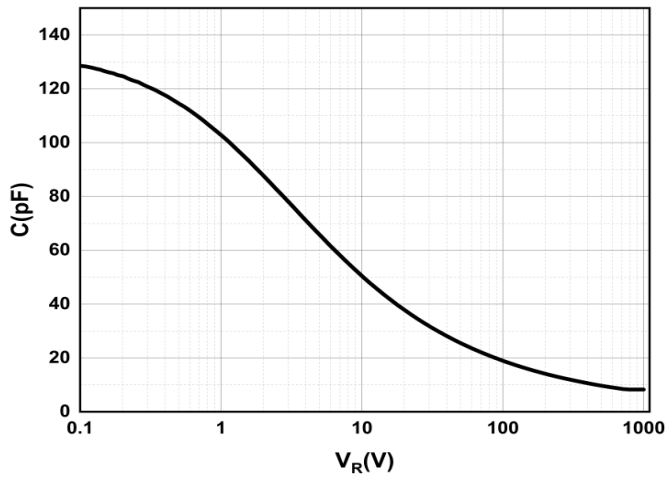


Figure 3. Capacitance vs. Reverse Voltage

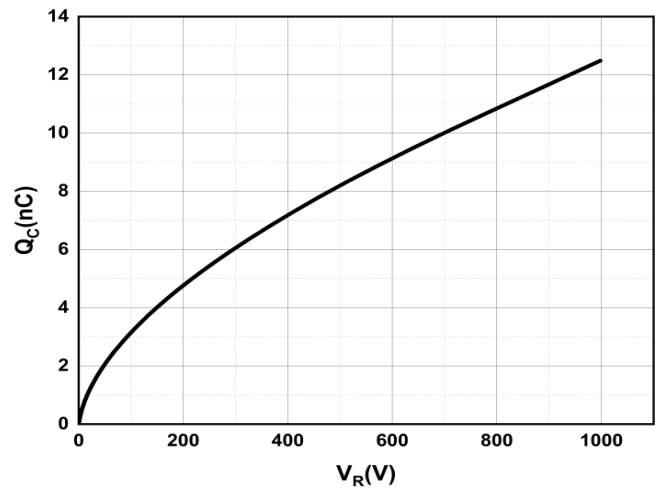


Figure 4. Total Capacitance Charge vs. Reverse Voltage

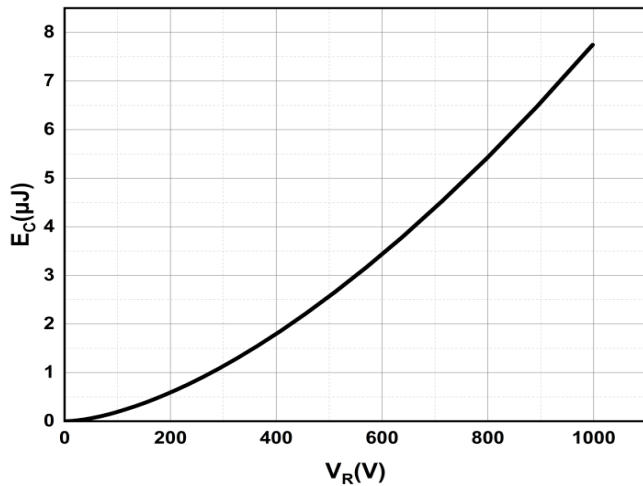


Figure 5. Capacitance Stored Energy

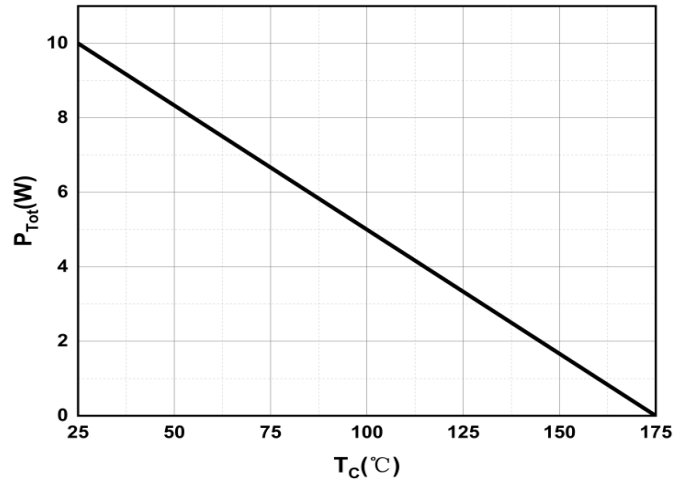
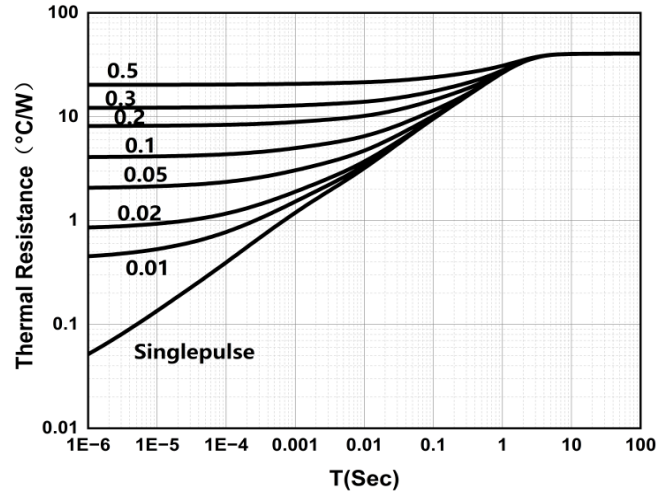
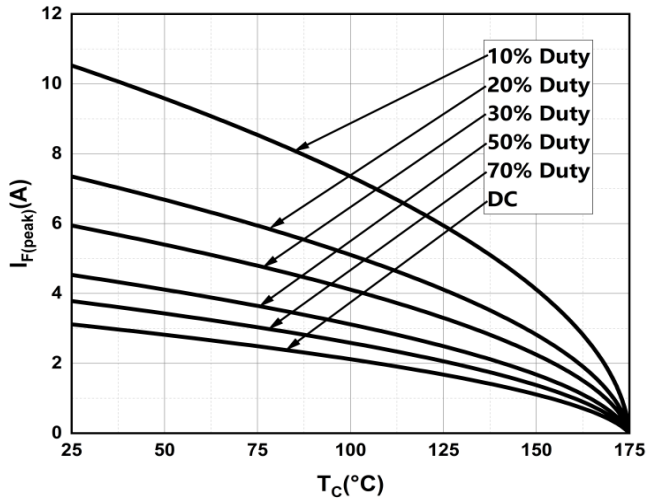
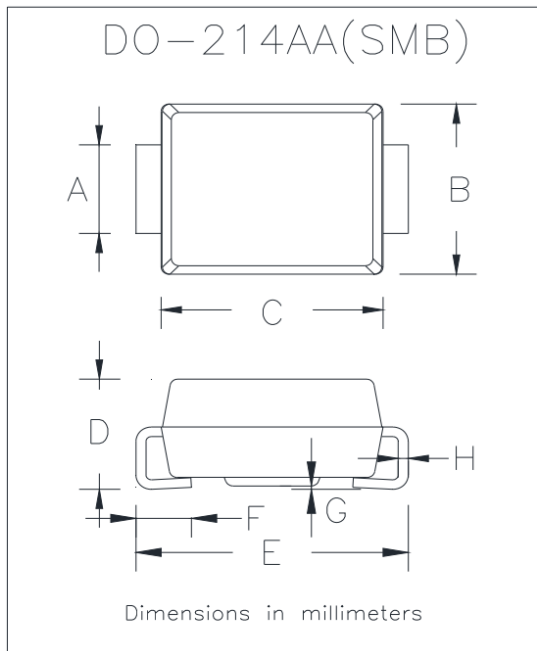


Figure 6. Power Derating

Typical Performance

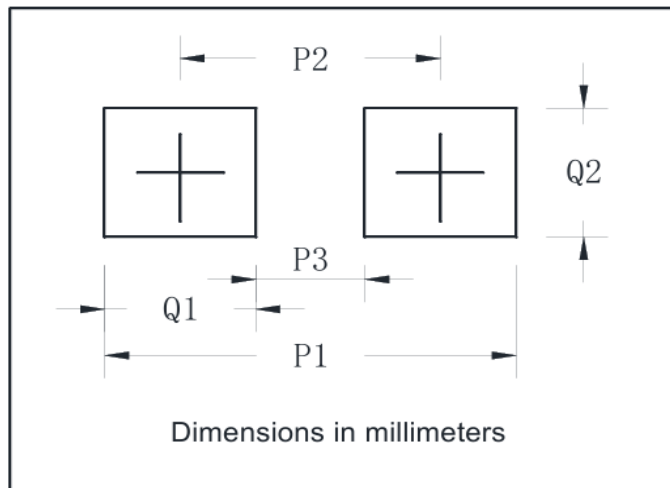


SMB Package Dimensions (mm)



DO-214AA(SMB)		
Dim	Min	Max
A	1.85	2.15
B	3.30	3.94
C	4.05	4.75
D	1.99	2.61
E	5.21	5.59
F	0.90	1.41
G	0.05	0.20
H	0.15	0.31

Suggested pad layout



DO-214AA(SMB)	
Dim	Millimeters
P1	6.8
P2	4.3
P3	1.8
Q1	2.5
Q2	2.3