

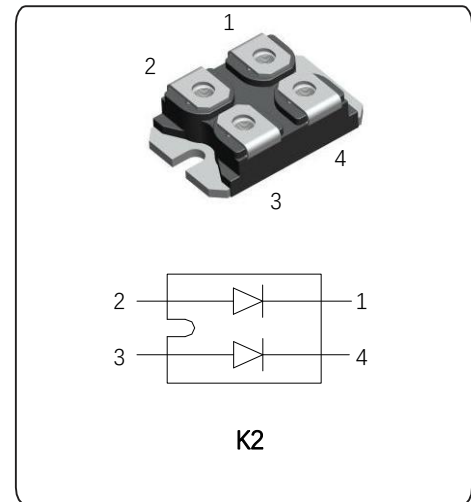
FEATURES

- Two fully independent SiC diodes
- Fully insulated package
- High operation junction temperature (175°C Tj)
- Ultra fast switching
- No Reverse Recovery/No Forward Recovery
- Temperature independent switching behavior
- Positive Temperature Coefficient of V_F
- Easy to use and parallel
- Industry standard outline
- Component in accordance to RoHS 2015/863/EU

MECHANICAL DATA

- Case: SOT-227
- Molding compound meets UL94V-0 flammability rating
- Polarity: As marked

SOT-227



TYPICAL APPLICATIONS

- Solar and wind inverter
- Uninterruptible power supply (UPS)
- Welding equipment
- Switched power supplies
- PFC

ABSOLUTE MAXIMUM RATINGS

Parameters	Symbol	Test conditions	Value	Unit
Maximum repetitive peak reverse voltage	V_{RRM}		1200	V
Maximum Continuous forward current, per diode	I_F	$T_c \leq 140^\circ\text{C}$	40	A
Single pulse forward current, per diode	I_{FSM}	$T_c = 25^\circ\text{C}$	300	A
RMS isolation voltage	V_{iso}	Any terminal to case, $t=1\text{S}$	3000	V
Maximum junction temperature	T_J		175	$^\circ\text{C}$
Maximum case temperature	T_c		150	$^\circ\text{C}$
Storage temperature	T_{stg}		-55 ~ 150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS

Parameters	Symbol	Test conditions	Min	Typ	Max	Units
Cathode to anode break down voltage	VBR	$I_R=100\mu A$	1200	-	-	V
Forward voltage	V _F	$I_F=40A \quad T_J=25^\circ C$		1.45	1.8	
		$I_F=40A \quad T_J=175^\circ C$		2.1	2.5	
Reverse leakage current	I _R	$V_R=V_{Rrated} \quad T_J=25^\circ C$		20	150	uA
		$V_R=V_{Rrated} \quad T_J=175^\circ C$		150	800	
Total Capacitance	C _j	$V_R=0.1V \quad T_J=25^\circ C, f=1MH$		2360		pF
		$V_R=400V \quad T_J=25^\circ C, f=1MH$		175		
		$V_R=800V \quad T_J=25^\circ C, f=1MH$		130		
Total Capacitive Charge	Q _c	$V_R=800V, I_F=40A, di/dt=200A/\mu s, T_J=25^\circ C$		92		

THERMAL MECHANICAL SPECIFICATIONS

Parameters	Symbol	Test conditions	Min	Typ	Max	Units
Junction to case, single leg conducting	R _{thjc}		-	-	0.56	°C/W
Junction to case, both leg conducting			-	-	0.28	
Case to heatsink	R _{thcs}	Flat, greased surface		0.075		
Weight				30		g
Mounting torque				1.3		Nm
Case style			SOT-227			

ORDERING INFORMATION TABLE

Device code	J	K2	SC	80	-	120
	①	②	③	④		⑤

- ① JH 's power module
- ② Circuit configuration (2 separate diodes, parallel pin-out)
- ③ SiC Diodes
- ④ Maximum average forward current (80A)
- ⑤ Voltage rating (120=1200V)

Figure 1. Forward Characteristics

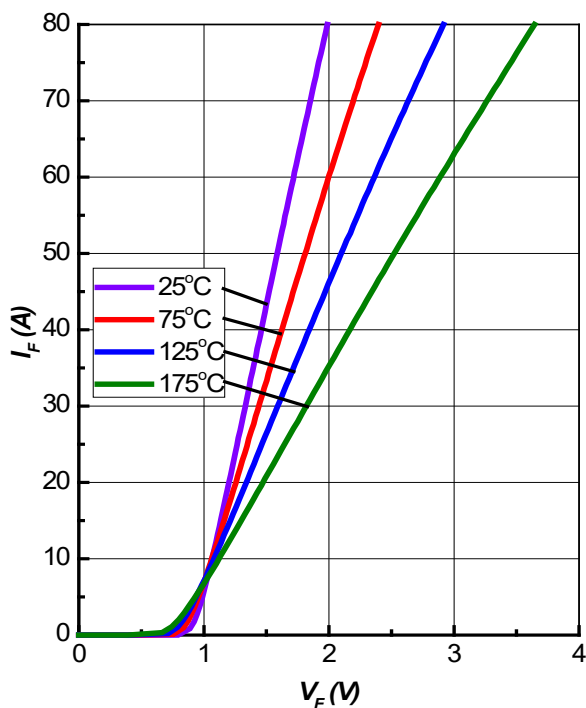


Figure 2. Reverse Characteristics

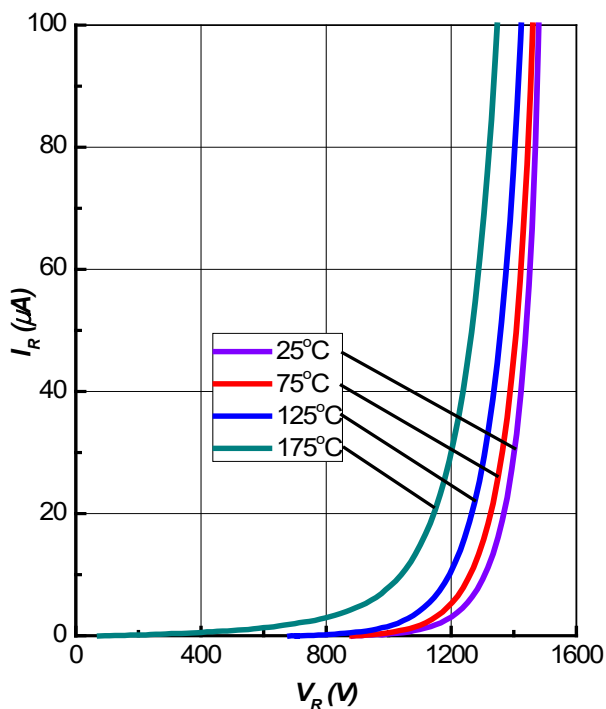


Figure 3. Total Capacitance vs. Reverse Voltage

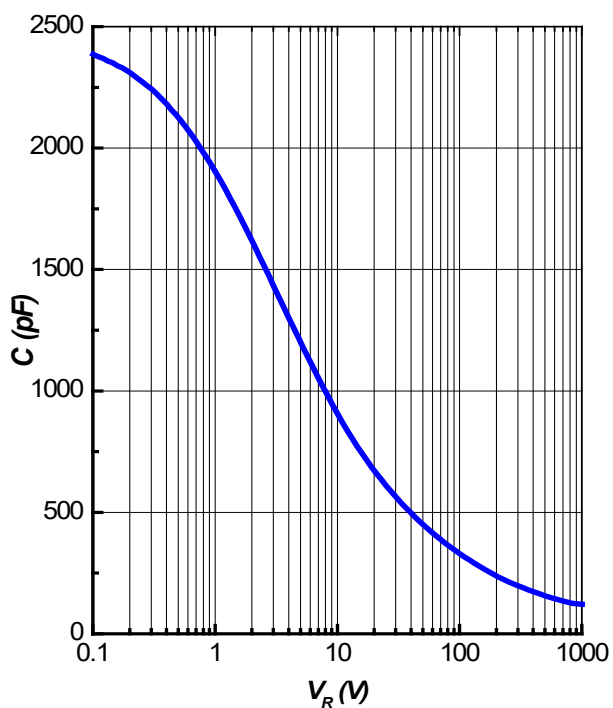
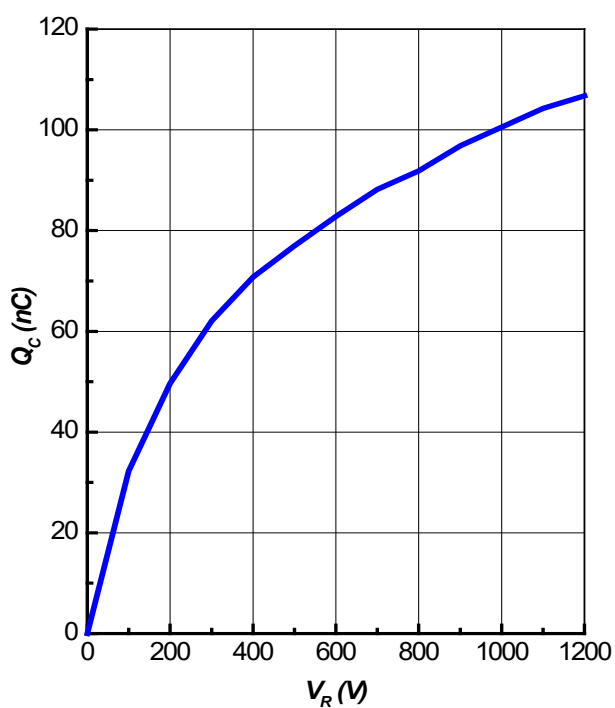
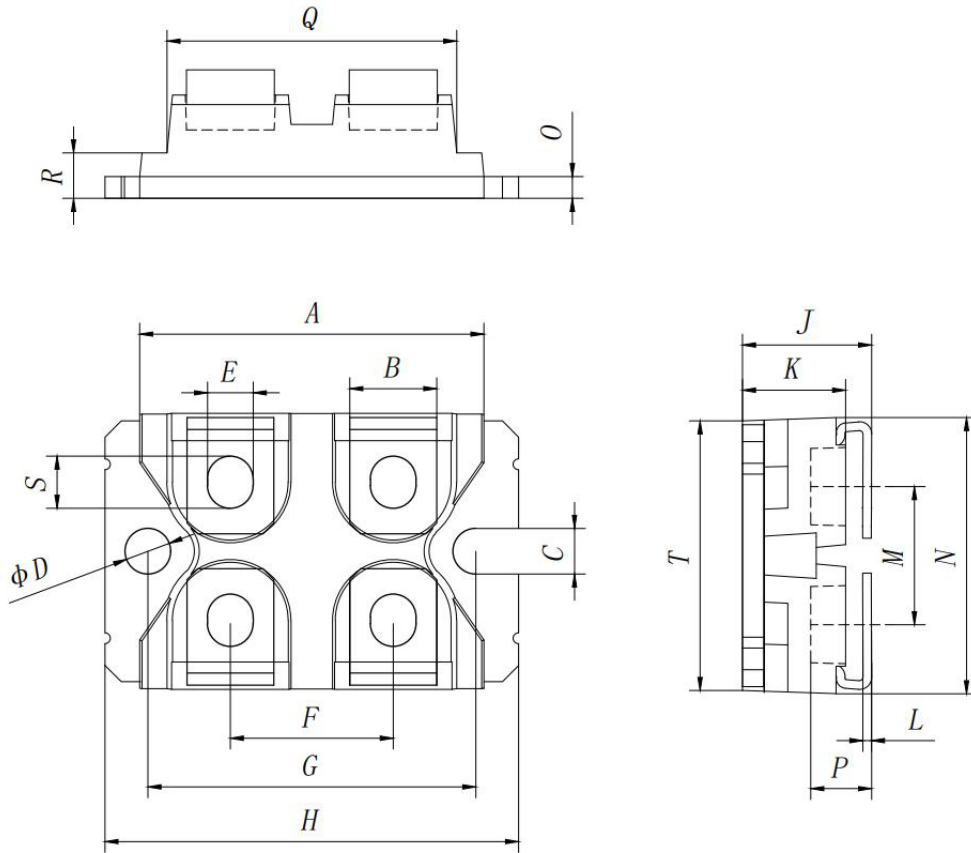


Figure 4. Total Capacitive Charge vs. Reverse Voltage



SOT-227package



SYMBOLS	DIMENSION IN MM		
	MIN	NOM	MAX
<i>A</i>	31.20	31.70	32.20
<i>B</i>	7.50	8.00	8.50
<i>C</i>	3.80	4.20	4.60
<i>D</i>	3.80	4.20	4.60
<i>E</i>	3.80	4.20	4.60
<i>F</i>	14.50	15.00	15.50
<i>G</i>	29.80	30.20	30.60
<i>H</i>	37.70	38.10	38.50
<i>J</i>	11.50	11.90	12.30
<i>K</i>	8.90	9.50	10.00
<i>L</i>	0.75	0.80	0.85
<i>M</i>	12.40	12.70	13.00
<i>N</i>	25.00	25.40	25.80
<i>O</i>	1.70	2.00	2.30
<i>P</i>	4.95	5.60	6.10
<i>Q</i>	26.40	26.70	27.00
<i>R</i>	3.90	4.18	4.45
<i>S</i>	4.20	4.80	5.40
<i>T</i>	23.80	24.80	25.80

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