



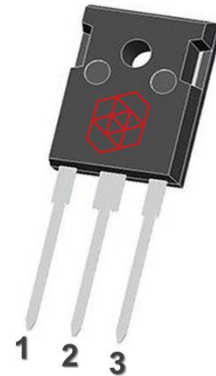
XD1230T4

1200V 20A SiC Schottky Barrier Diode

Features

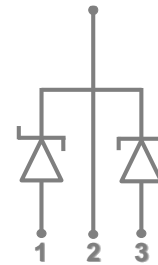
V_{CE}	I_F 135°C	I_F 144°C
1200V	43A	30A

- No reverse recovery
- High speed switching
- Low switching losses
- Low heatsink requirement
- Positive temperature coefficient



Applications

- Switching Power Supplies
- Power Factor Corrections
- Motor Drives
- Charging pile



Description

- These devices are 1200 SiC Schottky Barrier Diodes (SBD) with zero reverse recovery that allows systems to operate at higher switching frequencies. Lower heat dissipation requirements and higher system efficiency can be achieved in this TO-247-3L package. Two pins are in parallel to deliver 30A continuous current at 145°C.

Type	Package	Qty
XD1230T4	TO-247-3L	300

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Device Characteristics

Static Parameters				Test data			
	Sym.	Parameters	Conditions	Min	Typical	Max	Unit
1	V _{DC}	DC Blocking Voltage	I _R =100 μA	1200	/	/	V
2	V _F	Forward Voltage	I _F =15A, T _j =25°C	/	1.5	1.8	V
			I _F =15A, T _j =175°C	/	2.1	2.7	
3	I _R	Reverse Current	V _R =1200V, T _j =25°C	/	5	40	μA
			V _R =1200V, T _j =175°C	/	40	250	
4	C	Total Capacitance	V _R =0V, f=1MHz	/	1059	/	pF
			V _R =400V, f=1MHz	/	70.2	/	
			V _R =800V, f=1MHz	/	54.6	/	
5	Q _C	Total capacitive charge	V _R =800V	/	76.5	/	nC
6	E _C	Capacitance Stored Energy	V _R =800V	/	22	/	μJ
Thermal Parameters				Test data			
	Sym.	Parameters	Conditions	Min	Typical	Max	Unit
1	R _{th(j-c)}	Thermal resistance	Per device or per leg	/	1.1*/0.55**	/	°C/w

** Per device * Per leg

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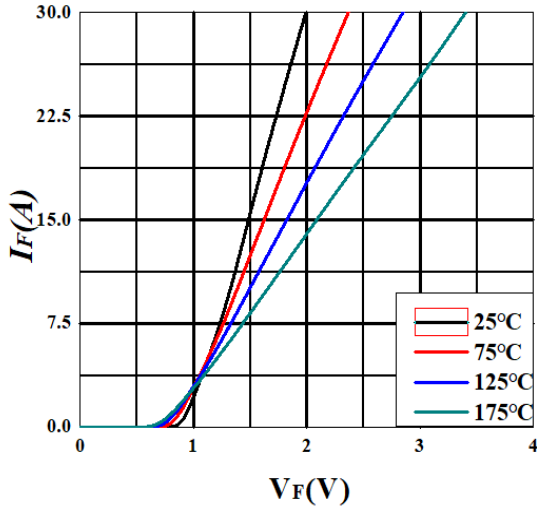
Absolute Max. Ratings

	Symbols	Parameters	Test Conditions	Value	Unit
1	V_{RR-max}	Reverse Voltage (Repetitive Peak)	$T_C = 25^\circ C$	1200	V
2	V_{RS-max}	Reverse Voltage (Surge Peak)	$T_C = 25^\circ C$	1200	V
3	V_{dc-max}	Reverse Voltage (DC)	$T_C = 25^\circ C$	1200	A
4	I_{F-max}	Continuous Forward Current (per device)	$T_C = 25^\circ C$	36/72	A
			$T_C = 135^\circ C$	17/34	
			$T_C = 144^\circ C$	15/30	
5	I_{FS-max}	Non-repetitive Forward Current (Surge)	$T_C = 25^\circ C$ $t_p = 10ms$ Half Sine Pulse	150*	A
6	$P_{total-max}$	Total Power Dissipation	$T_C = 25^\circ C$	136*	W
7	$\int i^2 dt-max$	i^2t value	$T_C = 25^\circ C$ $t_p = 10ms$	112*	A ² s
8	T_{o-max}	Operation Temperature	/	-55 to 175	°C
9	$T_{s-storage}$	Storage temperature	/	-55 to 175	°C
10	M	Mounting Torque	M3 Screw	1	Nm

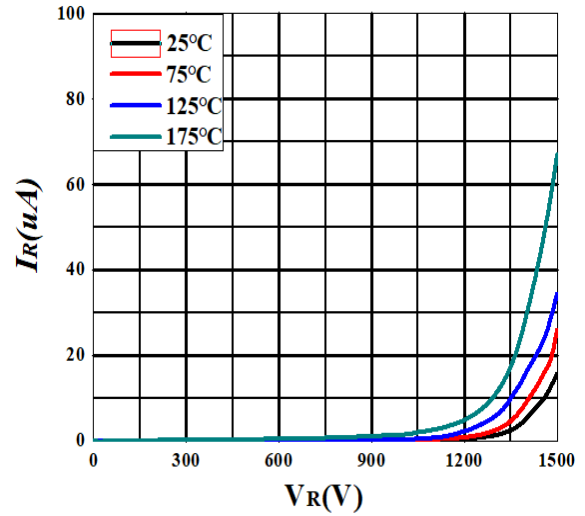
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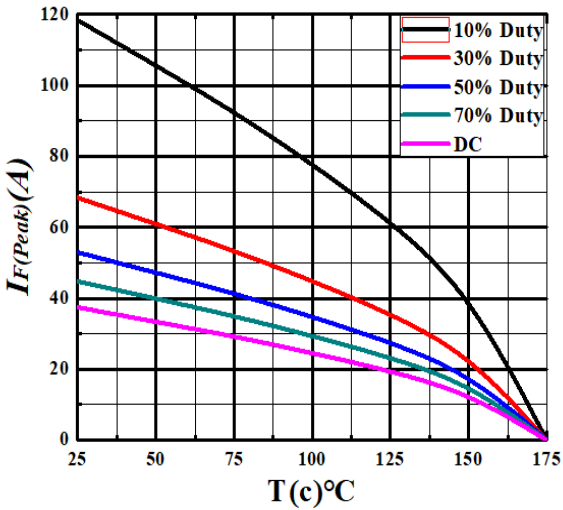
Electrical Performance



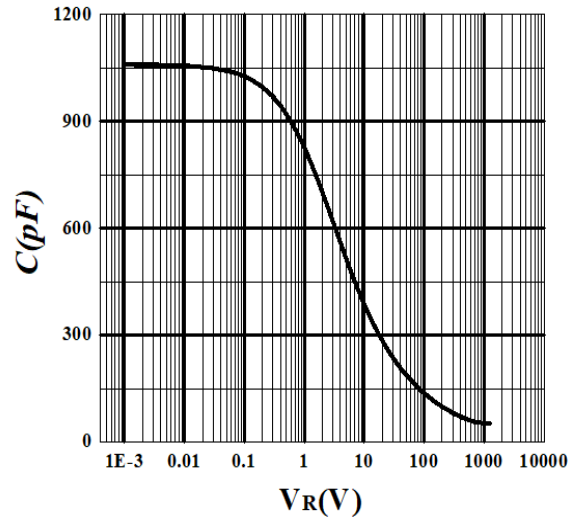
Forward Characteristics



Reverse Characteristics



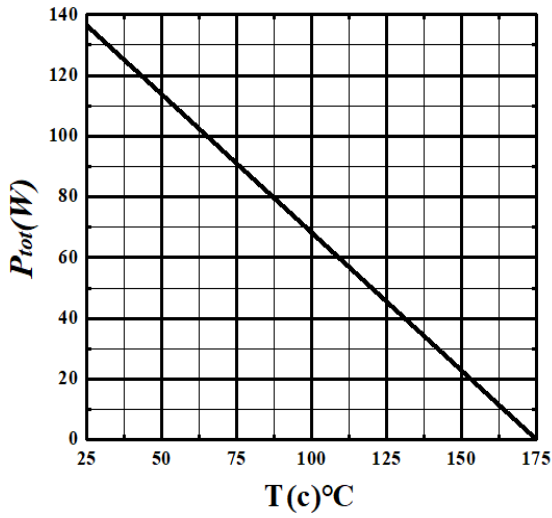
Current Derating



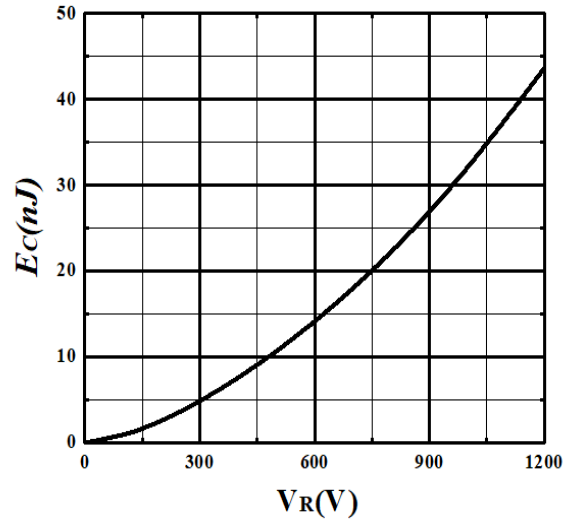
Capacitance vs. V_R

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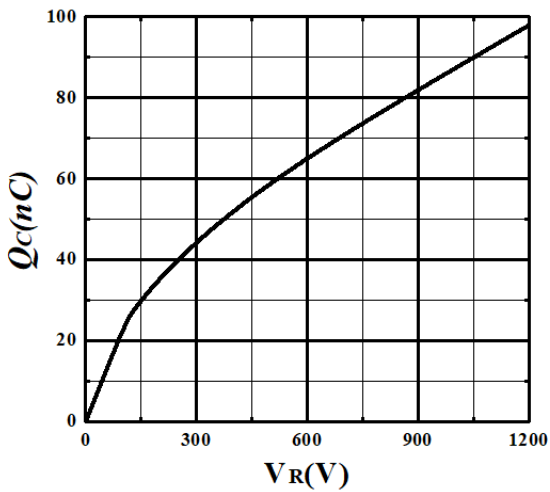
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Power Derating



Capacitance Stored Energy

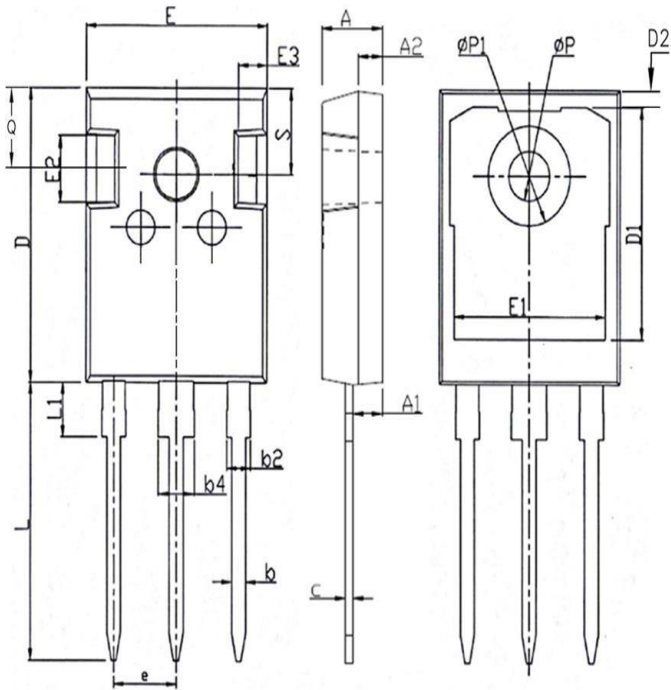


Total Capacitance Charge vs. V_R

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Package Information



SYMBOL	mm		
	MIN	NOM	MAX
A	4.8	5	5.2
A1	2.21	2.41	2.61
A2	1.85	2	2.15
b	1.11	1.21	1.36
b2	1.91	2.01	2.21
b4	2.91	3.01	3.21
c	0.51	0.6	0.75
D	20.7	21	21.3
D1	16.25	16.55	16.85
D2	1	1.2	1.35
E	15.5	15.8	16.1
E1	13	13.3	13.6
E2	4.8	5	5.2
E3	2.3	2.5	2.7
e	5.44 BSC		
L	19.62	19.92	20.22
L1	-	-	4.3
ϕP	3.4	3.6	3.8
$\phi P1$	-	-	7.3
Q	5.4	5.8	6.2
S	6.20 BSC		

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Revision History

Revision History

Document revision	Date	Description of changes
2.0	2023.10.11	Target datasheet

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