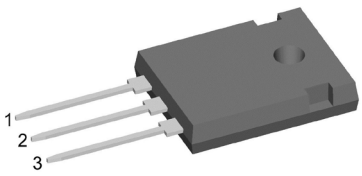
SiC Schottky Diode

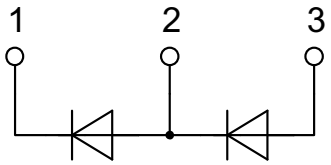
V_{RRM} = 2x 1200 V
I_{FAV} = 12.5 A

Ultra fast switching
Zero reverse recovery
Phase leg

Part number
DCG10P1200HR



Backside: isolated
E72873



Features / Advantages:
- Ultra fast switching
- Zero reverse recovery
- Zero forward recovery
- Temperature independent switching behavior
- Positive temperature coefficient of forward voltage
- T_{VJM} = 175°C

Applications:
- Solar inverter
- Uninterruptible power supply (UPS)
- Welding equipment
- Switched-mode power supplies
- Medical equipment
- High speed rectifier

Package: ISO247
- Isolation Voltage: 3000 V~
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0
- Soldering pins for PCB mounting
- Backside: DCB ceramic
- Reduced weight
- Advanced power cycling

Disclaimer Notice

Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.

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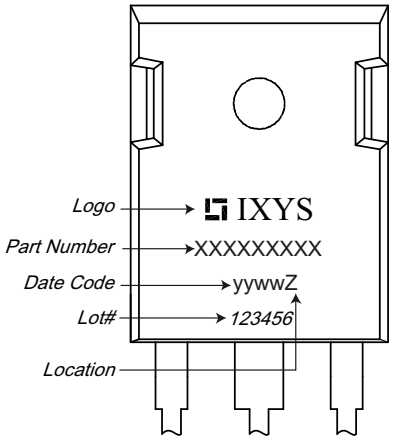
SiC Diode (per diode)				Ratings			
Symbol	**Definitions**	**Conditions**		**min.**	**typ.**	**max.**	
V_{RSM}	*max. non-repetitive reverse blocking voltage*					1200	V
V_{RRM}	*max. repetitive reverse blocking voltage*		T_{VJ} = 25°C			1200	V
I_R	*reverse current*	$V_R = V_{RRM}$	T_{VJ} = 25°C		30	250	µA
			T_{VJ} = 175°C		55	350	µA
V_F	*forward voltage*	I_F = 10 A	T_{VJ} = 25°C		1.5	1.8	V
		I_F = 20 A					V
		I_F = 10 A	T_{VJ} = 175°C		2.2	3.0	V
		I_F = 20 A					V
I_{FAV}	*average forward current*	T_C = 80°C	rectangular, d = 0.5			12.5	A
		T_C = 100°C	T_{VJ} = 175°C			11.0	A
I_{F25}	*forward current*	based on typ. V_{F0} and r_F	T_C = 25°C			22	A
I_{F80}			T_C = 80°C			17	A
I_{F100}			T_C = 100°C			15	A
I_{FSM}	*max forward surge current*	t = 10 ms,half sine (50 Hz)	T_{VJ} = 25°C				A
		t_P = 10 µs, pulse	V_R = 0V			750	A
V_{F0}	*threshold voltage*	*for power loss calculation*	T_{VJ} = 125°C		0.77		V
			175°C		0.69		V
r_F	*slope resistance*		T_{VJ} = 125°C		107		mΩ
			175°C		133		mΩ
Q_C	*total capacitive charge*	V_R = 800 V, I_F = 10A	T_{VJ} = 25°C		52		nC
		dI/dt = 200 A/µs					
C	*total capacitance*	V_R = 0 V	T_{VJ} = 25°C, f = 1 MHz		755		pF
		V_R = 400 V			45		pF
		V_R = 800 V			38		pF
R_{thJC}	*thermal resistance junction to case*					1.9	K/W
R_{thJH}	*thermal resistance junction to heatsink*	with heatsink compound; IXYS test setup			2.2		K/W

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Package ISO247			Ratings			
Symbol	**Definitions**	**Conditions**	**min.**	**typ.**	**max.**	
I_{RMS}	*RMS current*	per terminal			70	A
T_{stg}	*storage temperature*		-40		150	°C
T_{op}	*operation temperature*		-40		150	°C
T_{VJ}	*virtual junction temperature*		-40		175	°C
Weight				6		g
M_D	*mounting torque*		0.8		1.2	Nm
F_C	*mounting force with clip*		40		120	N
$d_{Spp/App}$	*creepage distance on surface /*	terminal to terminal	2.7			mm
$d_{Spb/Apb}$	*striking distance through air*	terminal to backside	4.1			mm
V_{ISOL}	*isolation voltage*	t = 1 second t = 1 minute 50/60 Hz; RMS; I_{ISOL} < 1 mA		3600 3000		V V

Product Marking



Part description

D = Diode
C = SiC
G = Extreme fast
10 = Current Rating [A]
P = Phase leg
1200 = Reverse Voltage [V]
HR = ISO247 (3)

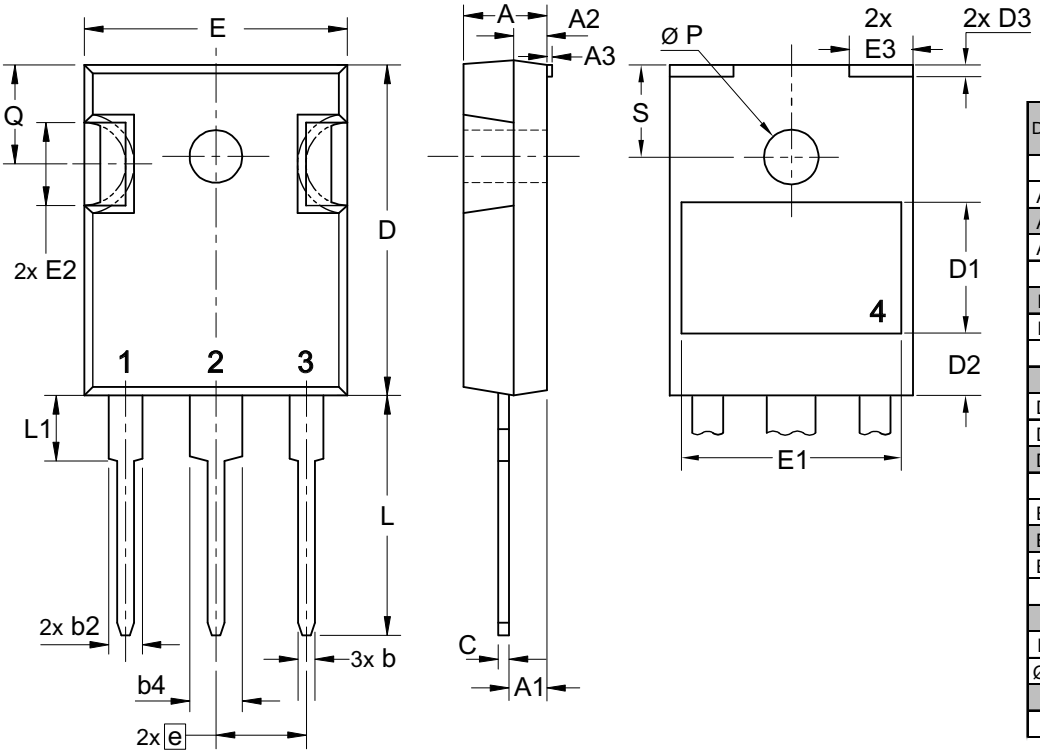
Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Ordering Code
Standard	DCG10P1200HR	DCG10P1200HR	Tube	30	DCG10P1200HR

Equivalent Circuits for Simulation	*on die level, typical			
I → V_0 — R_0		T_{VJ} = 125°C	T_{VJ} = 175°C	
$V_{0\ max}$	*threshold voltage*	0.77	0.68	V
$R_{0\ max}$	*slope resistance **	107	133	mΩ

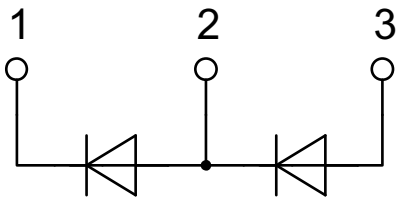
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Outlines ISO247



Dim.	Millimeter		Inches	
	min	max	min	max
A	4.70	5.30	0.185	0.209
A1	2.21	2.59	0.087	0.102
A2	1.50	2.49	0.059	0.098
A3	typ. 0.05		typ. 0.002	
b	0.99	1.40	0.039	0.055
b2	1.65	2.39	0.065	0.094
b4	2.59	3.43	0.102	0.135
c	0.38	0.89	0.015	0.035
D	20.79	21.45	0.819	0.844
D1	typ. 8.90		typ. 0.350	
D2	typ. 2.90		typ. 0.114	
D3	typ. 1.00		typ. 0.039	
E	15.49	16.24	0.610	0.639
E1	typ. 13.45		typ. 0.530	
E2	4.31	5.48	0.170	0.216
E3	typ. 4.00		typ. 0.157	
e	5.46 BSC		0.215 BSC	
L	19.80	20.30	0.780	0.799
L1	-	4.49	-	0.177
Ø P	3.55	3.65	0.140	0.144
Q	5.38	6.19	0.212	0.244
S	6.14 BSC		0.242 BSC	



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SiC Diode (per diode)

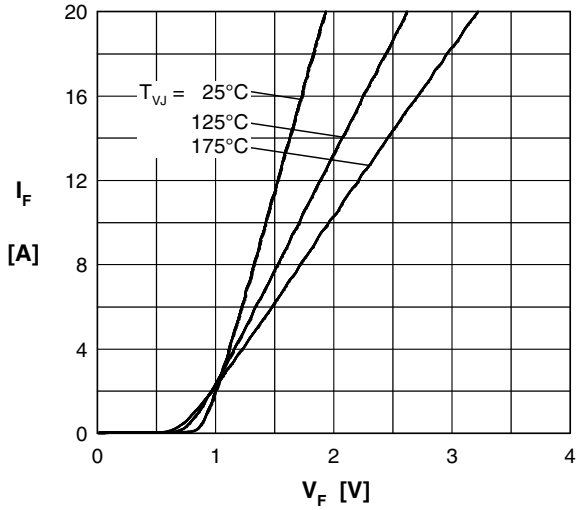


Fig. 1 Typ. forward characteristics.

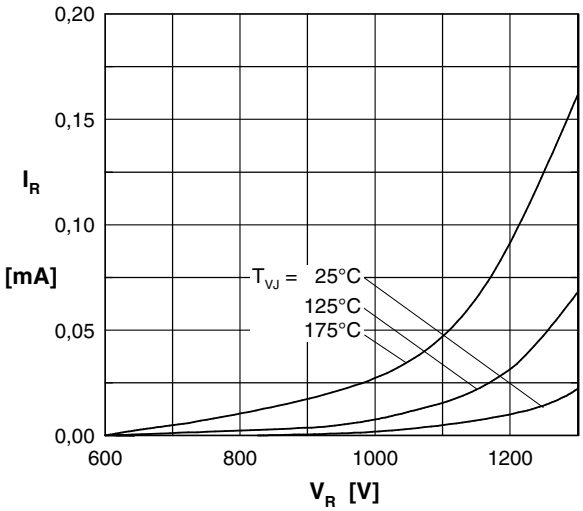


Fig. 2 Typ. reverse characteristics

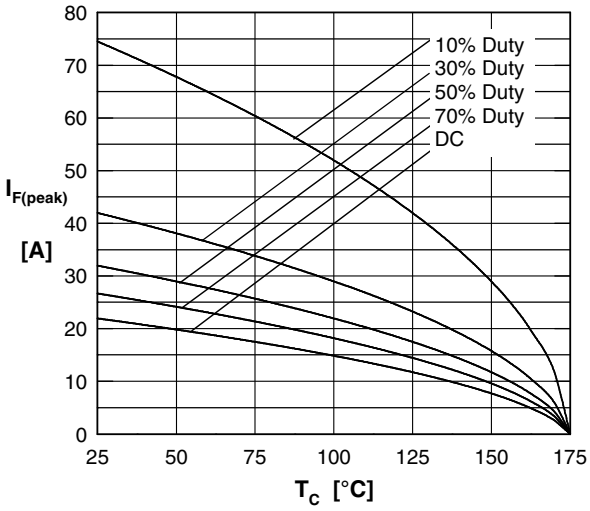


Fig. 3 Typ. current derating

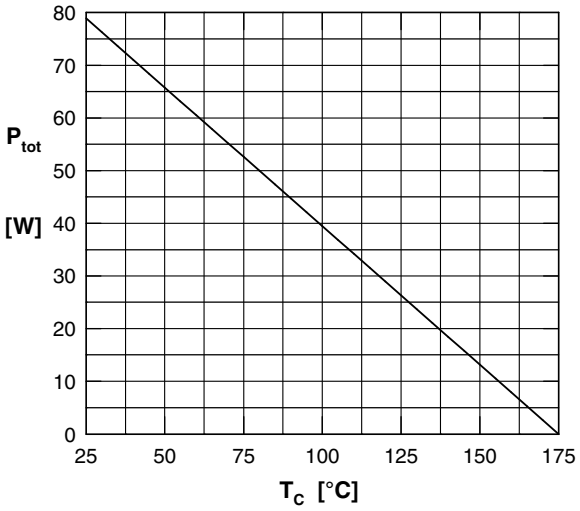


Fig. 4 Power derating

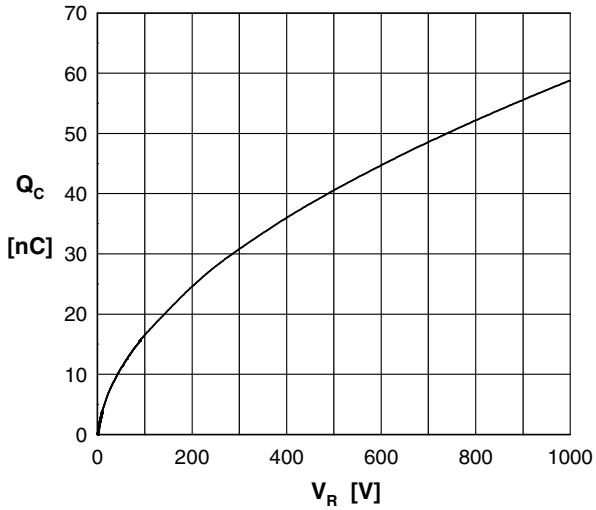


Fig. 5 Typ. recovery charge vs. reverse voltage

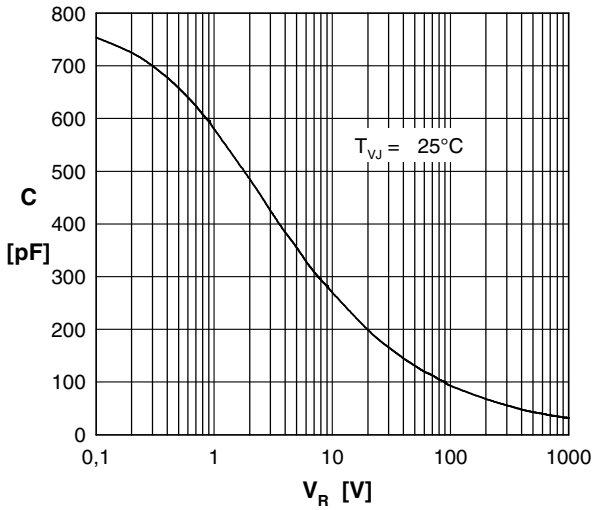


Fig. 6 Typ. junction capacitance vs. reverse Voltage

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SiC Diode (per diode)

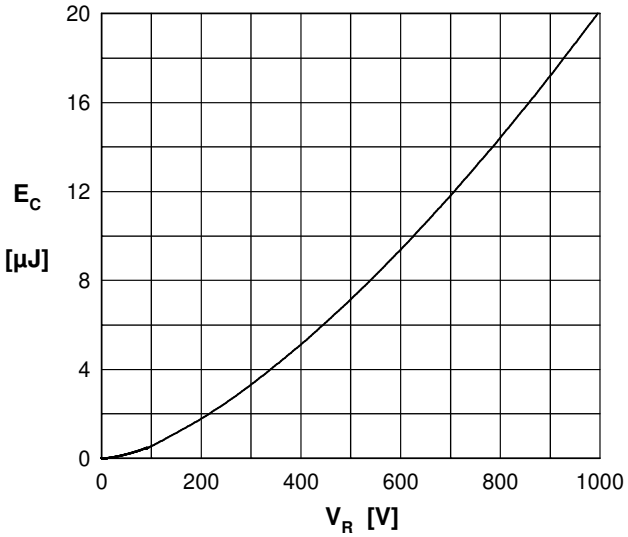


Fig. 7 Typical capacitance stored energy

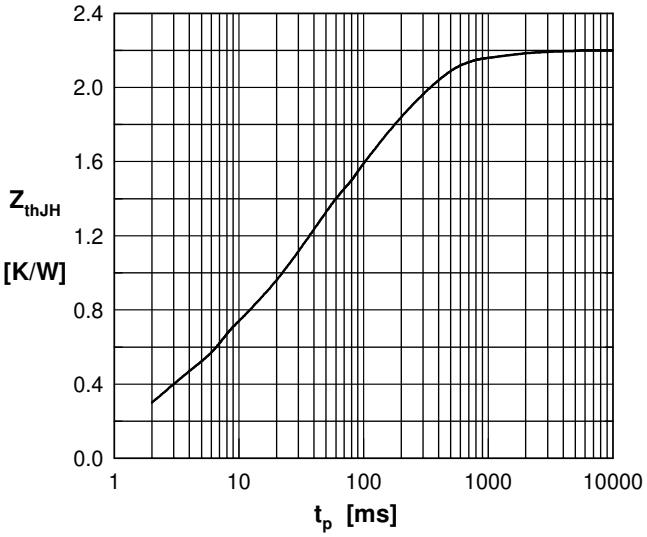


Fig. 8 Typ. transient thermal impedance junction to heatsink

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