

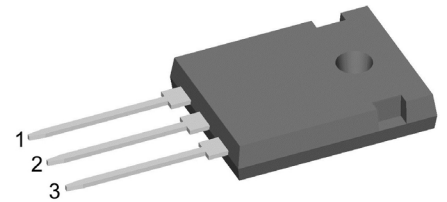
SiC Schottky Diode

$$V_{RRM} = 1200 \text{ V}$$

$$I_{FAV} = 2 \times 18.5 \text{ A}$$

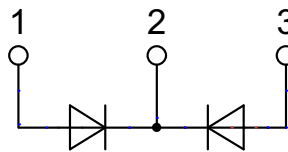
Ultra fast switching
 Zero reverse recovery
 Common Cathode

Part number
DCG35C1200HR



Backside: isolated

 E72873



Features / Advantages:

- Ultra fast switching
- Zero reverse recovery
- Zero forward recovery
- Temperature independent switching behavior
- Positive temperature coefficient of forward voltage
- $T_{VJM} = 175^{\circ}\text{C}$

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

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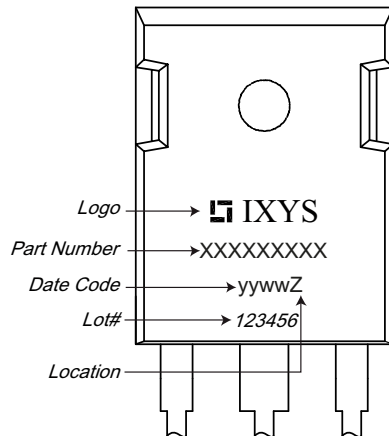


SiC Diode (per diode)				Ratings			
Symbol	Definitions	Conditions		min.	typ.	max.	
V_{RSM}	max. non-repetitive reverse blocking voltage					1200	V
V_{RRM}	max. repetitive reverse blocking voltage		$T_{VJ} = 25^{\circ}\text{C}$			1200	V
I_R	reverse current	$V_R = V_{RRM}$	$T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = 175^{\circ}\text{C}$		35 65	200 400	μA μA
V_F	forward voltage	$I_F = 20\text{ A}$ $I_F = 40\text{ A}$	$T_{VJ} = 25^{\circ}\text{C}$		1.5	1.8	V V
		$I_F = 20\text{ A}$ $I_F = 40\text{ A}$	$T_{VJ} = 175^{\circ}\text{C}$		2.2	3.0	V V
I_{FAV}	average forward current	$T_C = 80^{\circ}\text{C}$ $T_C = 100^{\circ}\text{C}$	rectangular, d = 0.5 $T_{VJ} = 175^{\circ}\text{C}$			18.5 17.0	A A
I_{F25}	forward current	based on typ. V_{F0} and r_F	$T_C = 25^{\circ}\text{C}$			34	A
I_{F80}			$T_C = 80^{\circ}\text{C}$			26.5	A
I_{F100}			$T_C = 100^{\circ}\text{C}$			23	A
I_{FSM}	max forward surge current	$t = 10\text{ ms, half sine (50 Hz)}$ $t_p = 10\text{ }\mu\text{s, pulse}$	$T_{VJ} = 25^{\circ}\text{C}$ $V_R = 0\text{ V}$			1000	A A
V_{F0}	threshold voltage	for power loss calculation	$T_{VJ} = 125^{\circ}\text{C}$		0.78		V
			175°C		0.73		V
r_F	slope resistance		$T_{VJ} = 125^{\circ}\text{C}$ 175°C		57.0 70.5		$\text{m}\Omega$ $\text{m}\Omega$
Q_C	total capacitive charge	$V_R = 800\text{ V, } I_F = 20\text{ A}$ $di/dt = 200\text{ A}/\mu\text{s}$	$T_{VJ} = 25^{\circ}\text{C}$		99		nC
C	total capacitance	$V_R = 0\text{ V}$ $V_R = 400\text{ V}$ $V_R = 800\text{ V}$	$T_{VJ} = 25^{\circ}\text{C, } f = 1\text{ MHz}$		1500 93 67		pF pF pF
R_{thJC}	thermal resistance junction to case	with heatsink compound; IXYS test setup				1.4	K/W
R_{thJH}	thermal resistance junction to heatsink				1.6		K/W



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	50/60 Hz; RMS; I _{ISOL} < 1 mA		3600		V
		t = 1 minute			3000		V

Product Marking



Part description

D = Diode
 C = SiC
 G = Extreme fast
 35 = Current Rating [A]
 C = Common Cathode
 1200 = Reverse Voltage [V]
 HR = ISO247 (3)

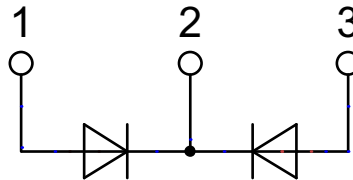
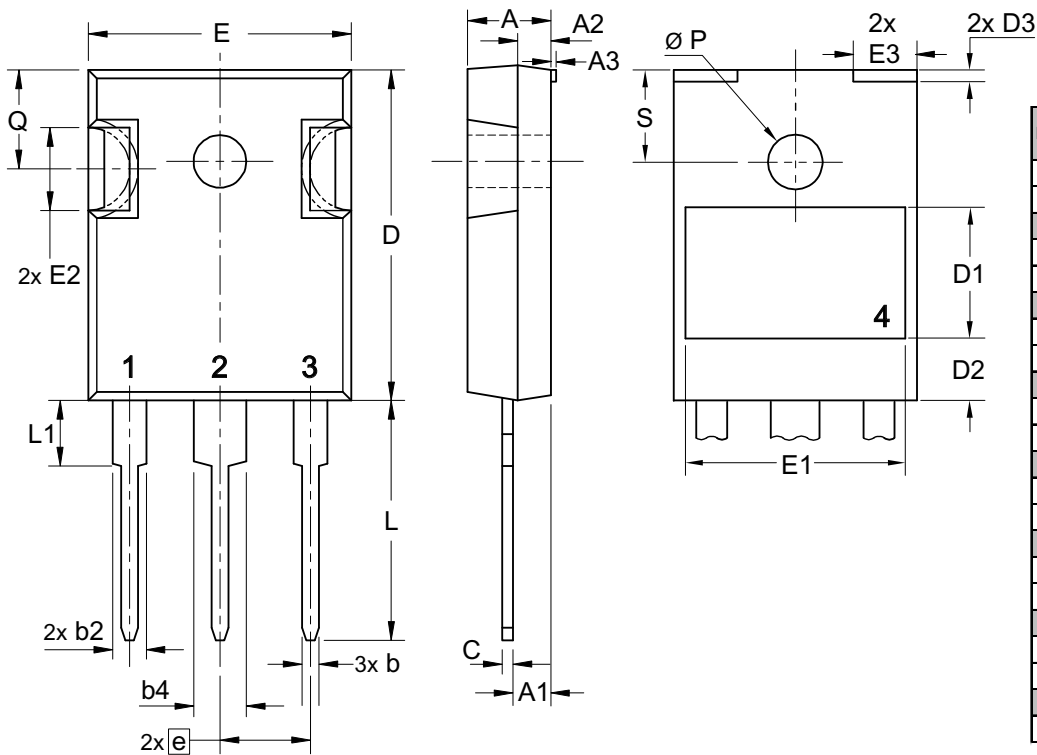
Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Ordering Code
Standard	DCG35C1200HR	DCG35C1200HR	Tube	30	DCG35C1200HR

Equivalent Circuits for Simulation

*on die level, typical

		$T_{VJ} = 125^{\circ}\text{C}$	$T_{VJ} = 175^{\circ}\text{C}$	
$V_{0\max}$	threshold voltage	0.78	0.73	V
$R_{0\max}$	slope resistance *	57.0	70.5	mΩ

Outlines ISO247



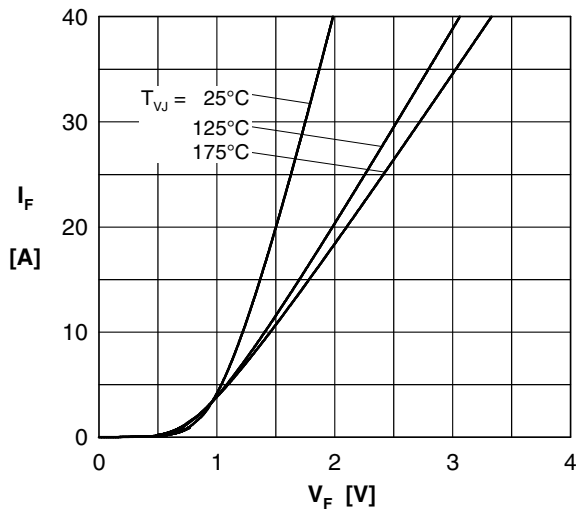
SiC Diode (per diode)


Fig. 1 Typ. forward characteristics.

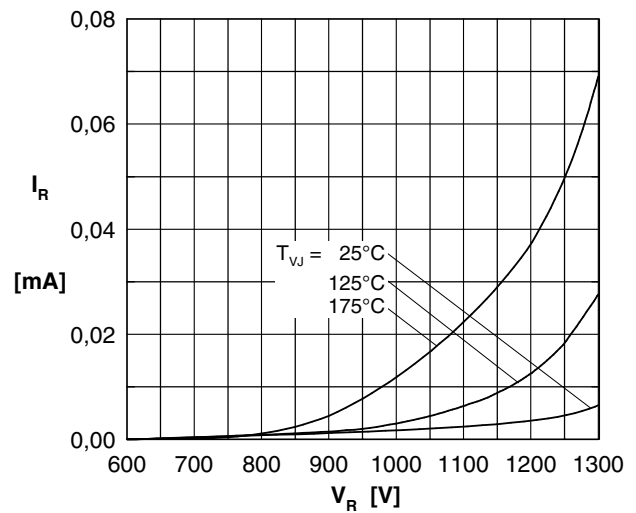


Fig. 2 Typ. reverse characteristics

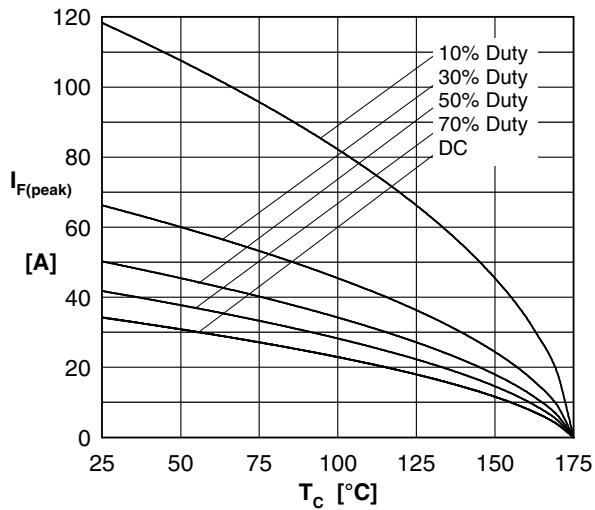


Fig. 3 Typ. current derating

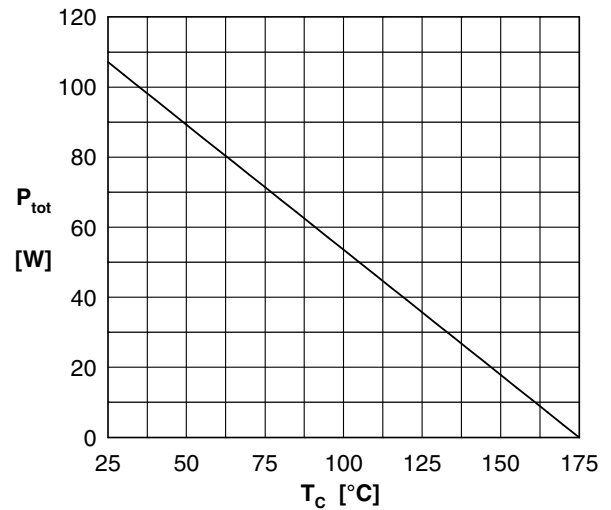


Fig. 4 Power derating

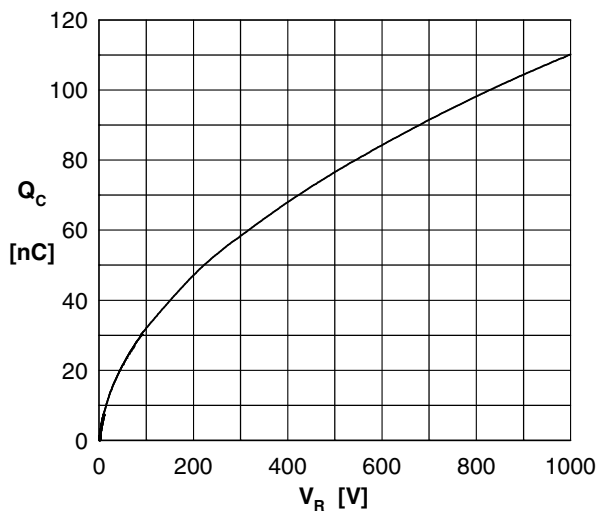


Fig. 5 Typ. recovery charge vs. reverse voltage

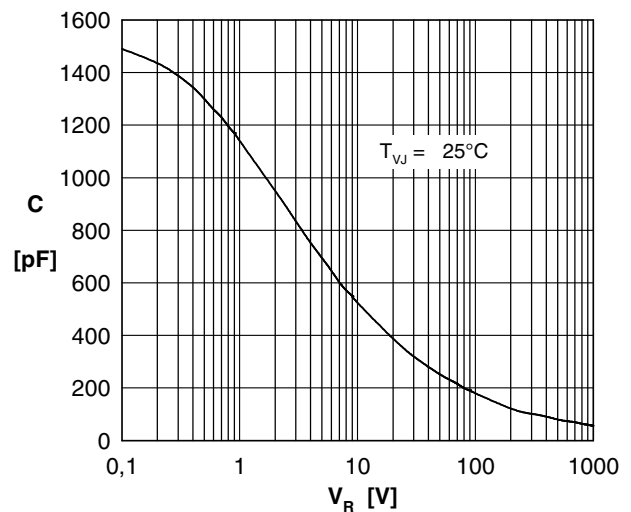


Fig. 6 Typ. junction capacitance vs. reverse Voltage

SiC Diode (per diode)

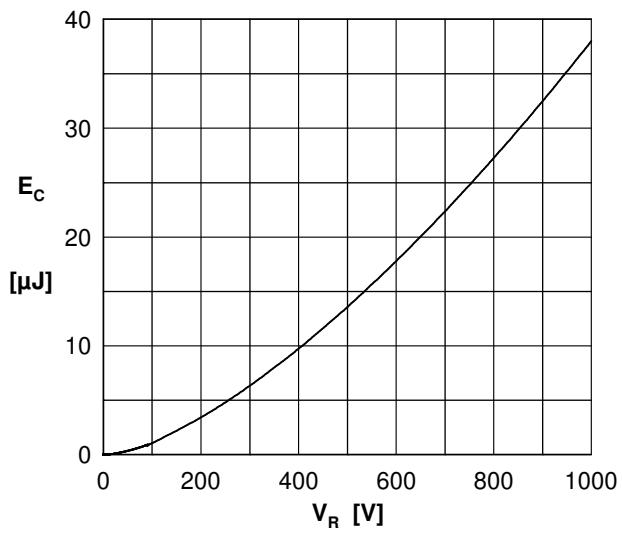


Fig. 7 Typical capacitance stored energy

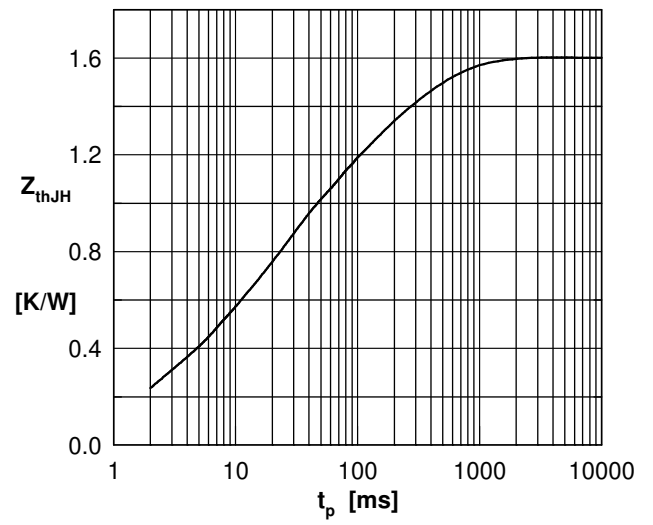


Fig. 8 Typ. transient thermal impedance junction to heatsink