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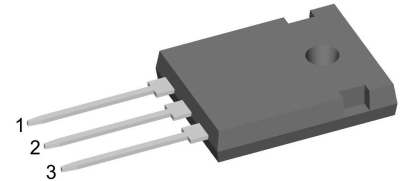
# SiC Schottky Diode

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


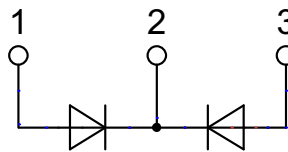
$$I_{FAV} = 2 \times 18 \text{ A}$$

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: 3600 V~
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0
- Soldering pins for PCB mounting
- Backside: DCB ceramic
- Reduced weight
- Advanced power cycling

**Terms & Conditions of Usage**

The data contained in this product data sheet is exclusively intended for technically trained staff. The user will have to evaluate the suitability of the product for the intended application and the completeness of the product data with respect to his application. The specifications of our components may not be considered as an assurance of component characteristics. The information in the valid application- and assembly notes must be considered. Should you require product information in excess of the data given in this product data sheet or which concerns the specific application of your product, please contact the sales office, which is responsible for you. Due to technical requirements our product may contain dangerous substances. For information on the types in question please contact the sales office, which is responsible for you.

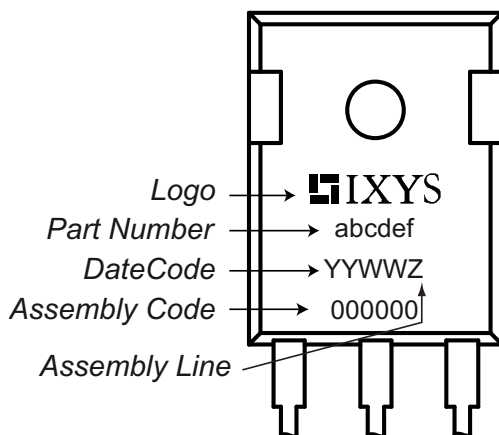
Should you intend to use the product in aviation, in health or live endangering or life support applications, please notify. For any such application we urgently recommend

- to perform joint risk and quality assessments;
- the conclusion of quality agreements;

- to establish joint measures of an ongoing product survey, and that we may make delivery dependent on the realization of any such measures.

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				1200	V		
$I_R$	reverse current	$V_R = V_{RRM}$	$T_{VJ} = 25^\circ\text{C}$		35	200	$\mu\text{A}$	
			$T_{VJ} = 175^\circ\text{C}$		65	400	$\mu\text{A}$	
$V_F$	forward voltage	$I_F = 20\text{ A}$ $I_F = 40\text{ A}$	$T_{VJ} = 25^\circ\text{C}$		1.5	1.8	V	
			$T_{VJ} = 175^\circ\text{C}$		2.2	3.0	V	
		$T_C = 80^\circ\text{C}$ $T_C = 100^\circ\text{C}$	rectangular, d = 0.5 $T_{VJ} = 175^\circ\text{C}$				18	A
							16	A
$I_{F25}$	forward current	based on typ. $V_{F0}$ and $r_F$	$T_C = 25^\circ\text{C}$			31.7	A	
$I_{F80}$			$T_C = 80^\circ\text{C}$			24.3	A	
$I_{F100}$			$T_C = 100^\circ\text{C}$			21.2	A	
$I_{FSM}$	max forward surge current	t = 10 ms, half sine (50 Hz) $t_p = 10\ \mu\text{s}$ , pulse	$T_{VJ} = 25^\circ\text{C}$ $V_R = 0\text{V}$			1000	A	
$V_{F0}$	threshold voltage	} for power loss calculation	$T_{VJ} = 125^\circ\text{C}$		0.78		V	
$r_F$	slope resistance		$T_{VJ} = 175^\circ\text{C}$		0.73		V	
			$T_{VJ} = 125^\circ\text{C}$		57.0		$\text{m}\Omega$	
			$T_{VJ} = 175^\circ\text{C}$		70.5		$\text{m}\Omega$	
$Q_C$	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 MHz		1500		pF	
					93		pF	
					67		pF	
$R_{thJC}$	thermal resistance junction to case	with heatsink compound; IXYS test setup			1.6		K/W	
$R_{thJH}$	thermal resistance junction to heatsink			2.1		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
<b>Weight</b>				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
$d_{Spb/Appb}$	striking distance through air	terminal to backside	4.1			mm
$V_{ISOL}$	isolation voltage	$t = 1$ second $t = 1$ minute		3600 3000		V V
		50/60 Hz; RMS; $I_{ISOL} < 1$ mA				

**Product Marking**

**Part description**

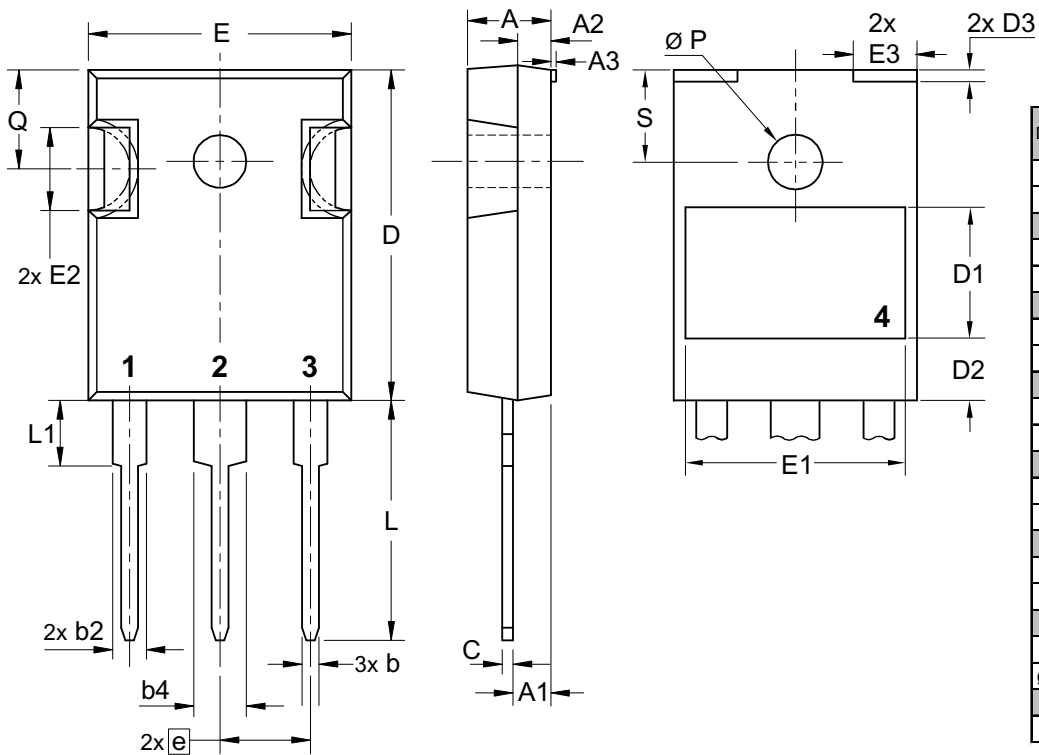
D = Diode  
 C = SiC  
 G = Extreme fast  
 35 = Current Rating [A]  
 C = Common Cathode  
 1200 = Reverse Voltage [V]  
 HR = ISO247 (3)

Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Ordering Code
Standard	DCG35C1200HR	DCG35C1200HR	Tube	30	521654

**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



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	

