

DCG17P1200HR

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 $V_{RRM} = 2x 1200 V$

 $I_{FAV} =$

SiC Schottky Diode

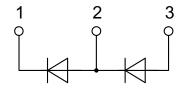
Ultra fast switching Zero reverse recovery Phase leg

Part number **DCG17P1200HR**



Backside: isolated

R E72873



Features / Advantages:

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

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.

IXYS reserves the right to change limits, test conditions and dimensions.

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SiC Diod	e (per diode)			Rating	S	
Symbol	Definitions	Conditions	min.	typ.	max.	
V _{RSM}	max. non-repetitive reverse blocking voltage				1200	V
V _{RRM}	max. repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}C$			1200	V
I _R	reverse current	$V_R = V_{RRM}$ $T_{VJ} = 25^{\circ}C$ $T_{VJ} = 175^{\circ}C$		35 65	200 400	μA μA
V _F	forward voltage	$I_F = 20 \text{ A}$ $T_{VJ} = 25^{\circ}\text{C}$ $I_F = 40 \text{ A}$		1.5	1.8	V
		$I_F = 20 \text{ A}$ $T_{VJ} = 175^{\circ}\text{C}$ $I_F = 40 \text{ A}$		2.2	3.0	V
I _{FAV}	average forward current	$T_{\rm C} = 80^{\circ}\text{C}$ rectangular, d = 0.5 $T_{\rm C} = 100^{\circ}\text{C}$ $T_{\rm VJ} = 175^{\circ}\text{C}$			18 16	A A
I _{F25} I _{F80} I _{F100}	forward current	based on typ. V_{F0} and r_F $ T_C = 25^{\circ}C \\ T_C = 80^{\circ}C \\ T_C = 100^{\circ}C $			31.7 24.3 21.2	A A A
I _{FSM}	max forward surge current	t = 10 ms,half sine (50 Hz) $T_{VJ} = 25^{\circ}C$ $t_P = 10 \mu s$, pulse $V_R = 0V$			1000	A A
V _{F0}	threshold voltage	$T_{VJ} = 125^{\circ}C$		0.78		V
r _F	slope resistance	for power loss calculation $ T_{VJ} = \begin{array}{c} 175^{\circ}\text{C} \\ 125^{\circ}\text{C} \\ 175^{\circ}\text{C} \end{array} $		0.73 57.0 70.5		$ m V \\ m\Omega \\ m\Omega$
Q _c	total capacitive charge	$V_R = 800 \text{ V}, I_F = 20 \text{A}$ $T_{VJ} = 25 ^{\circ}\text{C}$ $dI/dt = 200 \text{ A}/\mu\text{s}$		99		nC
С	total capacitance	$ \begin{array}{c} V_{\text{R}} = 0 \; V \\ V_{\text{R}} = 400 \; V \\ V_{\text{R}} = 800 \; V \end{array} \right\} \hspace{0.5cm} T_{\text{VJ}} = 25^{\circ}\text{C, f} = 1 \; \text{MHz} $		1500 93 67		pF pF pF
R _{thJC}	thermal resistance junction to case thermal resistance junction to heatsink	with heatsink compound; IXYS test setup		2.1	1.6	K/W K/W

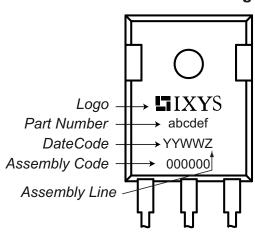




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Package	ISO247			Rating	s	
Symbol	Definitions	Conditions	min.	typ.	max.	
I _{RMS}	RMS current	per terminal			70	Α
T _{stg}	storage temperature		-40		150	°C
T _{op}	operation temperature		-40		150	°C
T _{VJ}	virtual junction temperature		-40		175	°C
Weight				6		g
M _D F _C	mounting torque mounting force with clip		0.8 40		1.2 120	Nm N
d _{Spp/App}	creepage distance on surface / striking distance through air	terminal to terminal terminal to backside	2.7 4.1			mm
V _{ISOL}	isolation voltage	t = 1 second t = 1 minute 50/60 Hz; RMS; I _{ISOL} < 1 mA		3600 3000		V

Product Marking



Part description

D = Diode

C = SiC
G = Extreme fast
17 = Current Rating [A]
P = Phase leg
1200 = Reverse Voltage [V]

HR = ISO247 (3)

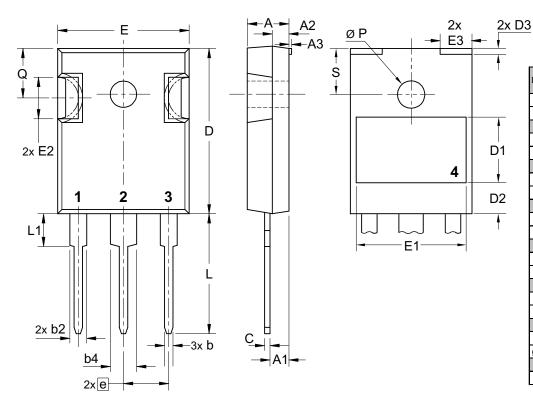
Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Ordering Code
Standard	DCG17P1200HR	DCG17P1200HR	Tube	30	523045

Equival	ent Circuits for Simulation	*on die level, typical				
$I \rightarrow V_0$	\vdash R_0 \vdash	T _{vJ} = 125°C	T _{vJ} = 175°C			
V _{0 max}	threshold voltage	0.78	0.73	V		
$R_{0 max}$	slope resistance *	57.0	70.5	mΩ		

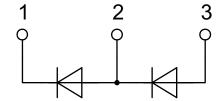


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Outlines ISO247



Dim.	Millimeter		Inches		
DIIII.	min	max	min	max	
Α	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	
А3	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	
С	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		
Е	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		
е	5.46 BSC		0.215 BSC		
L	19.80	20.30	0.780 0.799		
L1	-	4.49	-	0.177	
ØΡ	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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