



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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HiPerFRED²

$$V_{RRM} = 300V$$

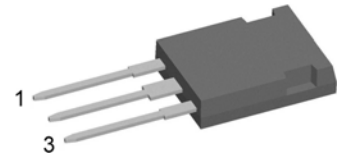
$$I_{FAV} = 2x \ 30A$$

$$t_{rr} = 35ns$$


High Performance Fast Recovery Diode
 Low Loss and Soft Recovery
 Common Cathode

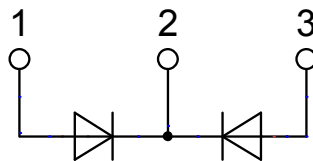
Part number

DPG60C300HJ



Backside: isolated

 E72873

**Features / Advantages:**

- Planar passivated chips
- Very low leakage current
- Very short recovery time
- Improved thermal behaviour
- Very low I_{rm} -values
- Very soft recovery behaviour
- Avalanche voltage rated for reliable operation
- Soft reverse recovery for low EMI/RFI
- Low I_{rm} reduces:
 - Power dissipation within the diode
 - Turn-on loss in the commutating switch

Applications:

- Antiparallel diode for high frequency switching devices
- Antisaturation diode
- Snubber diode
- Free wheeling diode
- Rectifiers in switch mode power supplies (SMPS)
- Uninterruptible power supplies (UPS)

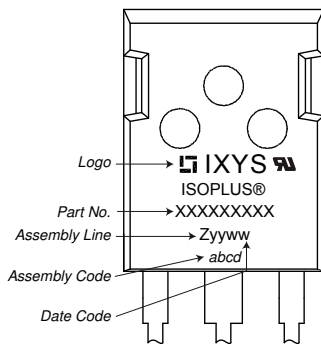
Package: ISOPLUS247

- 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

Fast Diode				Ratings		
Symbol	Definition	Conditions	min.	typ.	max.	Unit
V_{RSM}	max. non-repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}C$			300	V
V_{RRM}	max. repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}C$			300	V
I_R	reverse current, drain current	$V_R = 300 V$	$T_{VJ} = 25^{\circ}C$		1	μA
		$V_R = 300 V$	$T_{VJ} = 150^{\circ}C$		0.2	mA
V_F	forward voltage drop	$I_F = 30 A$	$T_{VJ} = 25^{\circ}C$		1.26	V
					1.54	V
		$I_F = 30 A$	$T_{VJ} = 150^{\circ}C$		0.96	V
					1.26	V
I_{FAV}	average forward current	$T_C = 140^{\circ}C$ rectangular $d = 0.5$	$T_{VJ} = 175^{\circ}C$		30	A
V_{FO}	threshold voltage	} for power loss calculation only	$T_{VJ} = 175^{\circ}C$		0.61	V
r_F	slope resistance				9.6	m Ω
R_{thJC}	thermal resistance junction to case				1.05	K/W
R_{thCH}	thermal resistance case to heatsink			0.25		K/W
P_{tot}	total power dissipation	$T_C = 25^{\circ}C$			145	W
I_{FSM}	max. forward surge current	$t = 10 \text{ ms}; (50 \text{ Hz}), \text{ sine}; V_R = 0 V$	$T_{VJ} = 45^{\circ}C$		450	A
C_J	junction capacitance	$V_R = 150 V \quad f = 1 \text{ MHz}$	$T_{VJ} = 25^{\circ}C$		60	pF
I_{RM}	max. reverse recovery current	} $I_F = 30 A; V_R = 200 V$	$T_{VJ} = 25^{\circ}C$		3	A
			$T_{VJ} = 125^{\circ}C$		8.5	A
t_{rr}	reverse recovery time	} $-di_F/dt = 200 A/\mu s$	$T_{VJ} = 25^{\circ}C$		35	ns
			$T_{VJ} = 125^{\circ}C$		65	ns

Package ISOPLUS247		Ratings				
Symbol	Definition	Conditions	min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal ¹⁾			70	A
T_{VJ}	virtual junction temperature		-55		175	°C
T_{op}	operation temperature		-55		150	°C
T_{stg}	storage temperature		-55		150	°C
Weight				6		g
F_C	mounting force with clip		20		120	N
$d_{Spp/App}$	creepage distance on surface striking distance through air	terminal to terminal	2.7			mm
$d_{Spbl/Abp}$		terminal to backside	4.1			mm
V_{ISOL}	isolation voltage	t = 1 second	3600			V
		t = 1 minute	3000			V

Product Marking



Part number

- D = Diode
- P = HiPerFRED
- G = extreme fast
- 60 = Current Rating [A]
- C = Common Cathode
- 300 = Reverse Voltage [V]
- HJ = ISOPLUS247 (3)

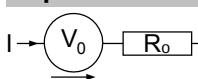
Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DPG60C300HJ	DPG60C300HJ	Tube	30	505494

Similar Part	Package	Voltage class
DPG60C300HB	TO-247AD (3)	300
DPG60C300QB	TO-3P (3)	300
DPG60C300PC	TO-263AB (D2Pak) (2)	300
DPF60C300HB	TO-247AD (3)	300
DPG80C300HB	TO-247AD (3)	300

Equivalent Circuits for Simulation

* on die level

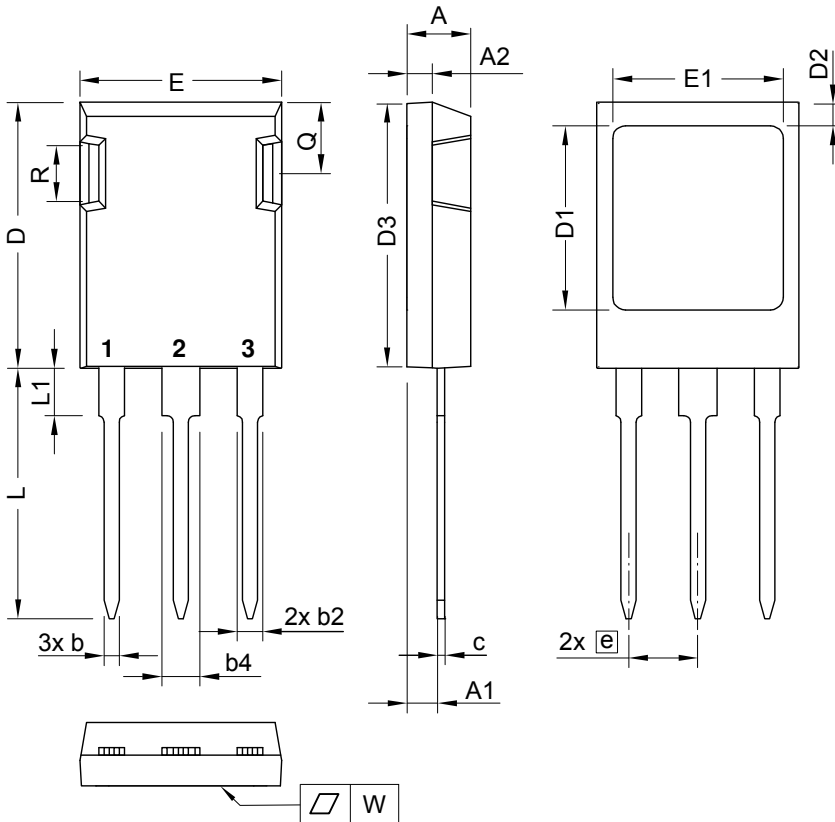
$T_{VJ} = 175\text{ °C}$



Fast Diode

$V_{0\ max}$	threshold voltage	0.61	V
$R_{0\ max}$	slope resistance *	7	mΩ

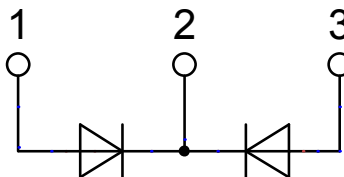
Outlines ISOPLUS247



Dim.	Millimeter		Inches	
	min	max	min	max
A	4.83	5.21	0.190	0.205
A1	2.29	2.54	0.090	0.100
A2	1.91	2.16	0.075	0.085
b	1.14	1.40	0.045	0.055
b2	1.91	2.20	0.075	0.087
b4	2.92	3.24	0.115	0.128
c	0.61	0.83	0.024	0.033
D	20.80	21.34	0.819	0.840
D1	15.75	16.26	0.620	0.640
D2	1.65	2.15	0.065	0.085
D3	20.30	20.70	0.799	0.815
E	15.75	16.13	0.620	0.635
E1	13.21	13.72	0.520	0.540
e	5.45 BSC		0.215 BSC	
L	19.81	20.60	0.780	0.811
L1	3.81	4.38	0.150	0.172
Q	5.59	6.20	0.220	0.244
R	4.25	5.50	0.167	0.217
W	-	0.10	-	0.004

Die konvexe Form des Substrates ist typ. < 0.04 mm über der Kunststoffoberfläche der Bauteilunterseite
 The convex bow of substrate is typ. < 0.04 mm over plastic surface level of device bottom side

Die Gehäuseabmessungen entsprechen dem Typ TO-247 AD gemäß JEDEC außer Schraubloch und L_{max}.
 This drawing will meet all dimensions requirement of JEDEC outline TO-247 AD except screw hole and except L_{max}.



Fast Diode

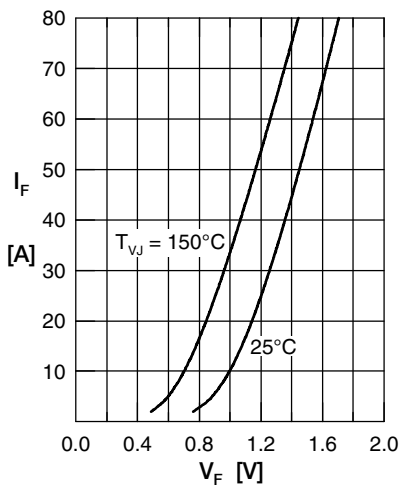


Fig. 1 Forward current I_F versus V_F

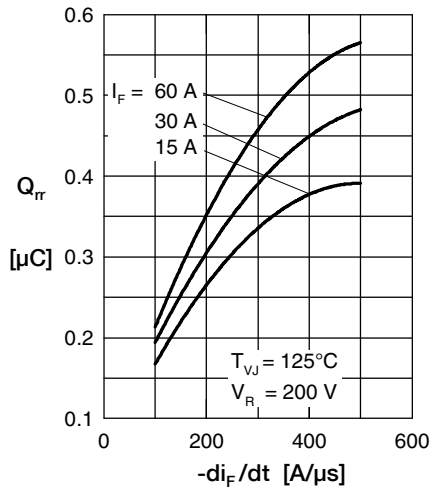


Fig. 2 Typ. reverse recov. charge Q_{rr} versus $-di_F/dt$

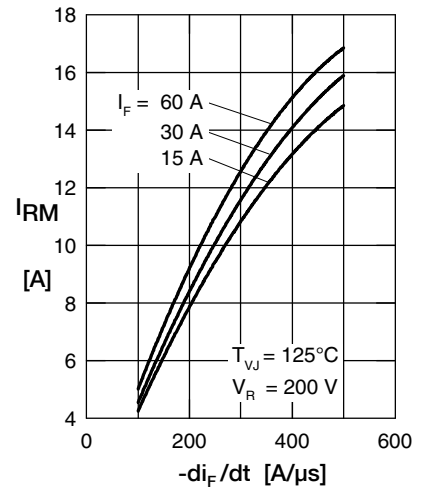


Fig. 3 Typ. reverse recov. current I_{RM} versus $-di_F/dt$

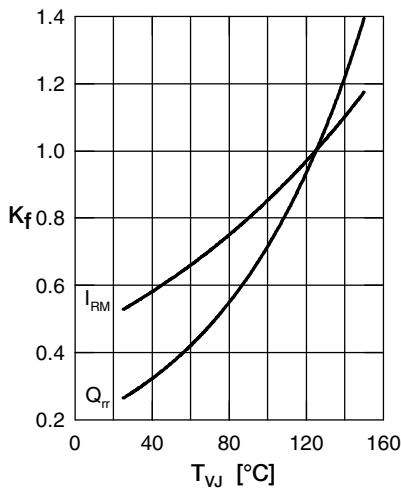


Fig. 4 Typ. dynamic parameters Q_{rr} , I_{RM} versus T_{VJ}

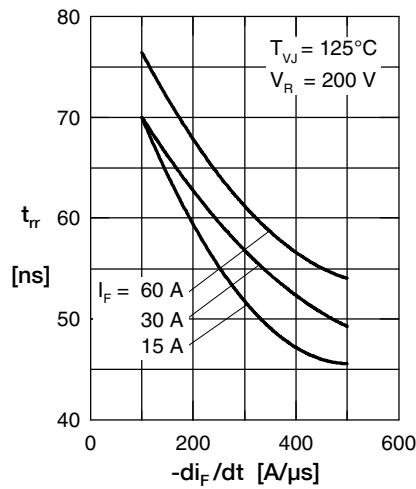


Fig. 5 Typ. reverse recov. time t_{rr} versus $-di_F/dt$

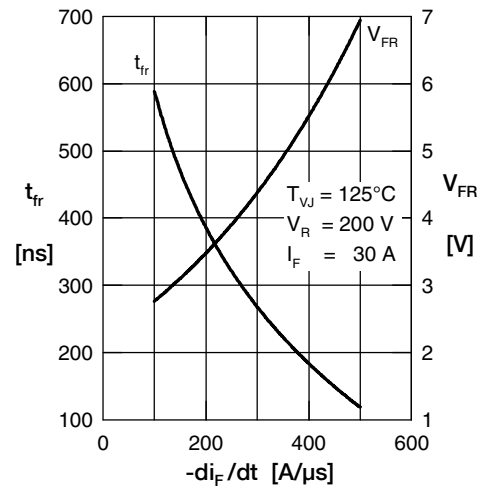


Fig. 6 Typ. forward recov. voltage V_{FR} & time t_{fr} versus di_F/dt

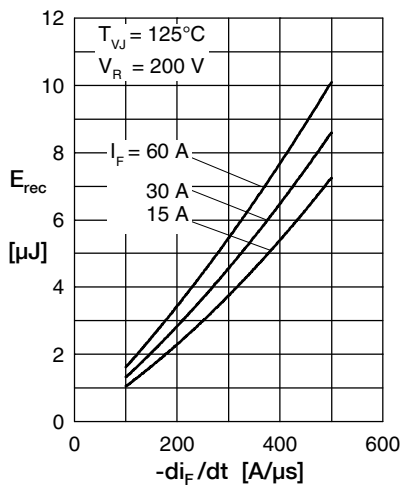


Fig. 7 Typ. recovery energy E_{rec} versus $-di_F/dt$

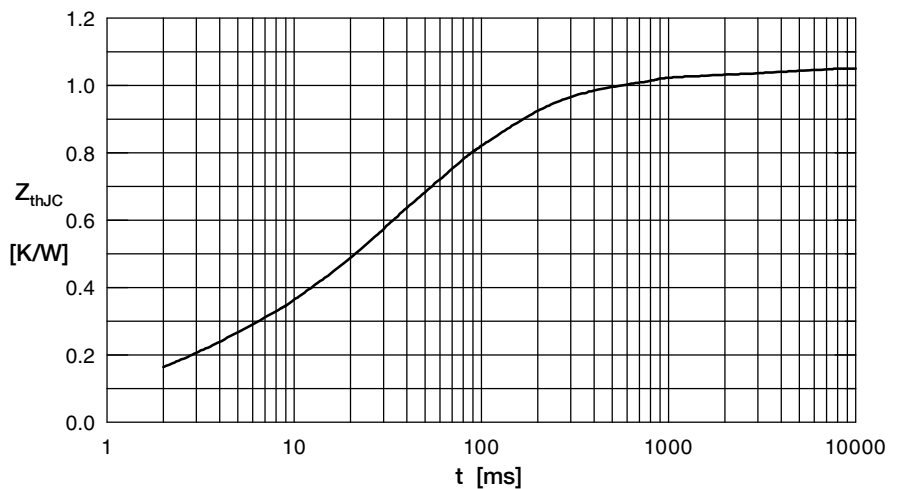


Fig. 8 Transient thermal impedance junction to case