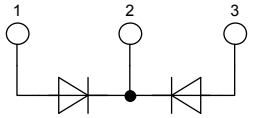
HiPerFRED

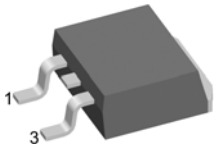
High Performance Fast Recovery Diode
Low Loss and Soft Recovery
Common Cathode

V_{RRM} = 300 V
I_{FAV} = 2x 30 A
t_{rr} = 35 ns

Part number

DPG 60 C 300 PC





Backside: cathode

Features / Advantages:

- Planar passivated chips
- Very low leakage current
- Very short recovery time
- Improved thermal behaviour
- Very low Irm-values
- Very soft recovery behaviour
- Avalanche voltage rated for reliable operation
- Soft reverse recovery for low EMI/RFI
- Low Irm 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:

- Housing: TO-263 (D2Pak)
- Industry standard outline
- Epoxy meets UL 94V-0
- RoHS compliant

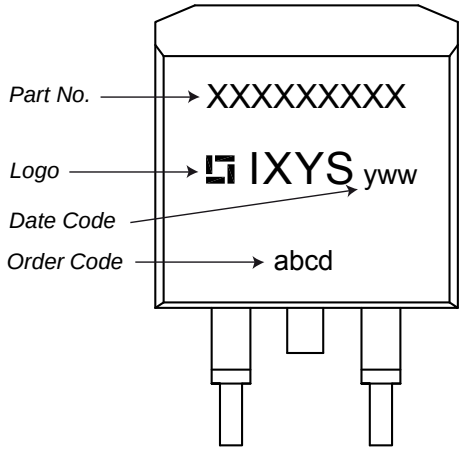
Ratings

Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RRM}	*max. repetitive reverse voltage*		T_{VJ} = 25°C			300	V
I_R	*reverse current*	V_R = 300 V	T_{VJ} = 25°C			1	µA
		V_R = 300 V	T_{VJ} = 150°C			0.1	mA
V_F	*forward voltage*	I_F = 30 A	T_{VJ} = 25°C			1.34	V
		I_F = 60 A				1.63	V
		I_F = 30 A	T_{VJ} = 150°C			1.06	V
		I_F = 60 A				1.39	V
I_{FAV}	*average forward current*	rectangular, d = 0.5	T_C = 140°C			30	A
V_{F0}	*threshold voltage* } *for power loss calculation only*		T_{VJ} = 175°C			0.70	V
r_F	*slope resistance* }					10.5	mΩ
R_{thJC}	*thermal resistance junction to case*					0.85	K/W
T_{VJ}	*virtual junction temperature*			-55		175	°C
P_{tot}	*total power dissipation*		T_C = 25°C			90	W
I_{FSM}	*max. forward surge current*	t = 10 ms (50 Hz), sine	T_{VJ} = 45°C			300	A
I_{RM}	*max. reverse recovery current*		T_{VJ} = 25°C		3		A
		I_F = 30 A; V_R = 100 V	T_{VJ} = °C		tbd		A
t_{rr}	*reverse recovery time*	$-di_F/dt$ = 200 A/µs	T_{VJ} = 25°C		35		ns
			T_{VJ} = °C		tbd		ns
C_J	*junction capacitance*	V_R = tbd V; f = 1 MHz	T_{VJ} = 25°C		tbd		pF
E_{AS}	*non-repetitive avalanche energy*	I_{AS} = 9 A; L = 100 µH	T_{VJ} = 25°C			0.5	mJ
I_{AR}	*repetitive avalanche current*	$V_A = 1.5 \cdot V_R$ typ.; f = 10 kHz				0.9	A

Symbol	Definition	Conditions	Ratings min.	typ.	max.	Unit
I_{RMS}	*RMS current*	per pin [1]			35	A
R_{thCH}	*thermal resistance case to heatsink*			0.25		K/W
T_{stg}	*storage temperature*		-55		150	°C
Weight				2		g
F_C	*mounting force with clip*		20		60	N

[1] I_{RMS} is typically limited by: 1. pin-to-chip resistance; or by 2. current capability of the chip.
In case of 1, a common cathode/anode configuration and a non-isolated backside, the whole current capability can be used by connecting the backside.

Product Marking



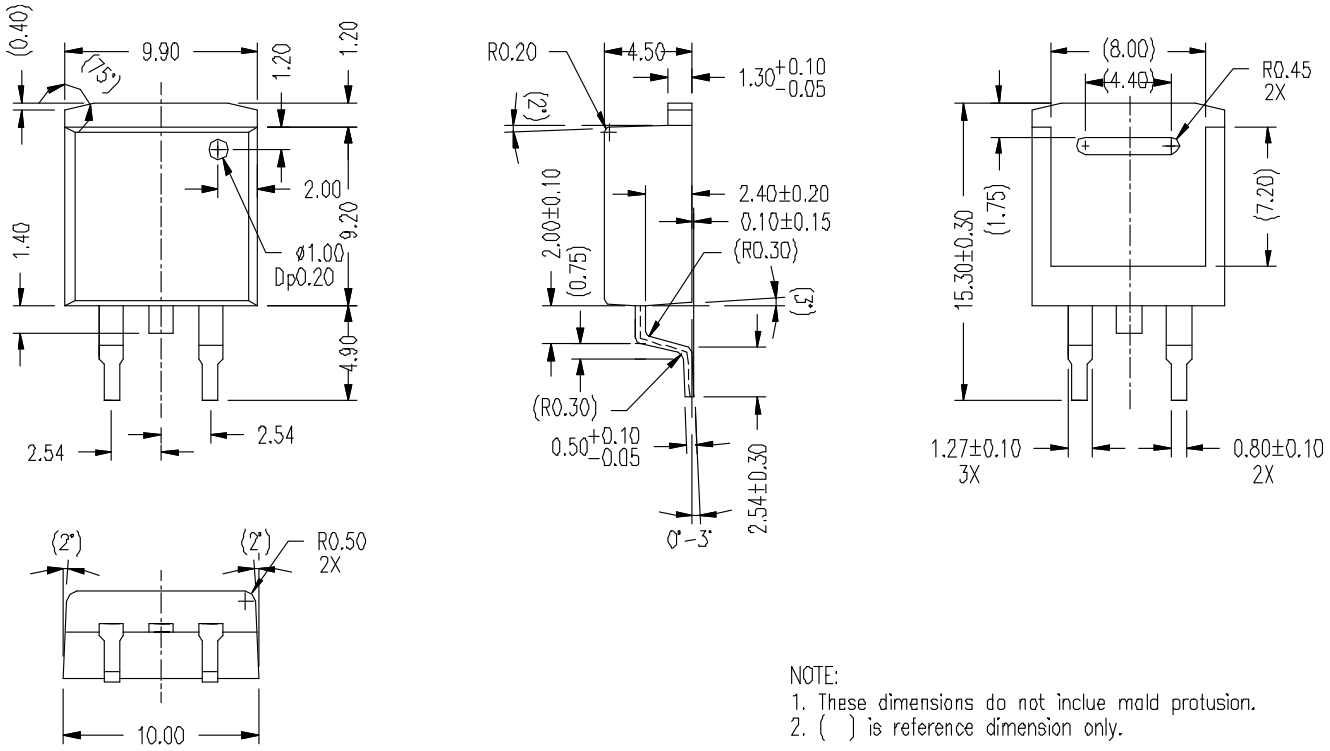
Part number

D = Diode
P = HiPerFRED
G = extreme fast
60 = Current Rating [A]
C = Common Cathode
300 = Reverse Voltage [V]
PC = TO-263AB (D2Pak) (2)

Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Code Key
Standard	DPG 60 C 300 PC	DPG60C300PC	Tube or Reel	50/800	503494

Similar Part	Package	Voltage Class
DPG60C300HB	TO-247	300
DPG60C300QB	TO-3P	300
DPG60C400QB	TO-3P	400
DPG60C200QB	TO-3P	200

Outlines TO-263 (D2Pak)



NOTE:
1. These dimensions do not inclue mald protusion.
2. ( ) is reference dimension only.