

HiPerFRED

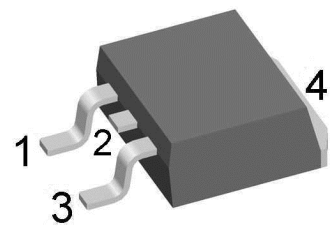
V_{RRM}	=	400 V
I_{FAV}	=	30 A
t_{rr}	=	45 ns

High Performance Fast Recovery Diode
 Low Loss and Soft Recovery
 Single Diode

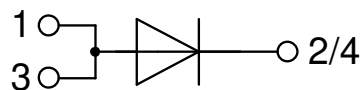
Part number

DPG30IM400PC

Marking on Product: DPG30IM400PC



Backside: cathode



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: TO-263 (D2Pak)

- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0

Disclaimer Notice

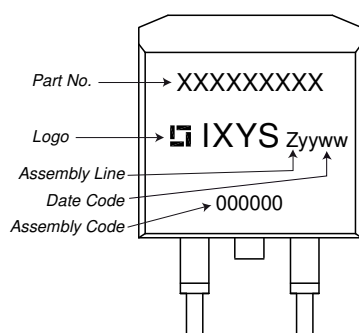
Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.

Fast Diode				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V _{RSM}	max. non-repetitive reverse blocking voltage	T _{VJ} = 25°C				400	V
V _{RRM}	max. repetitive reverse blocking voltage	T _{VJ} = 25°C				400	V
I _R	reverse current, drain current	V _R = 400 V	T _{VJ} = 25°C			1	μA
		V _R = 400 V	T _{VJ} = 150°C			0.2	mA
V _F	forward voltage drop	I _F = 30 A	T _{VJ} = 25°C			1.43	V
		I _F = 60 A				1.71	V
		I _F = 30 A	T _{VJ} = 150°C			1.16	V
		I _F = 60 A				1.50	V
I _{FAV}	average forward current	T _C = 145°C rectangular d = 0.5	T _{VJ} = 175°C			30	A
V _{F0}	threshold voltage	} for power loss calculation only		T _{VJ} = 175°C		0.76	V
r _F	slope resistance					11.3	mΩ
R _{thJC}	thermal resistance junction to case					0.85	K/W
R _{thCH}	thermal resistance case to heatsink				0.25		K/W
P _{tot}	total power dissipation	T _C = 25°C				175	W
I _{FSM}	max. forward surge current	t = 10 ms; (50 Hz), sine; V _R = 0 V		T _{VJ} = 45°C		300	A
C _J	junction capacitance	V _R = 200 V f = 1 MHz		T _{VJ} = 25°C	32		pF
I _{RM}	max. reverse recovery current	} I _F = 30 A; V _R = 270 V -di _F /dt = 200 A/μs		T _{VJ} = 25 °C	4		A
t _{rr}	reverse recovery time			T _{VJ} = 125 °C	8.5		A
				T _{VJ} = 25 °C	45		ns
				T _{VJ} = 125 °C	85		ns

Package TO-263 (D2Pak)			Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal ¹⁾			35	A
T_{VJ}	virtual junction temperature		-55		175	°C
T_{op}	operation temperature		-55		150	°C
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 the pin-to-chip resistance (1); or by the current capability of the chip (2). In case of (1) and a product with multiple pins for one chip-potential, the current capability can be increased by connecting the pins as one contact.

Product Marking



Part description

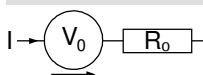
D = Diode
 P = HiPerFRED
 G = extreme fast
 30 = Current Rating [A]
 IM = Single Diode
 400 = Reverse Voltage [V]
 PC = TO-263AB (D2Pak) (2)

Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DPG30IM400PC-TRL	DPG30IM400PC	Tape & Reel	800	514002
Alternative	DPG30IM400PC-TUB	DPG30IM400PC	Tube	50	525120

Equivalent Circuits for Simulation

* on die level

$T_{VJ} = 175\text{ °C}$



Fast Diode

$V_{0\text{ max}}$ threshold voltage

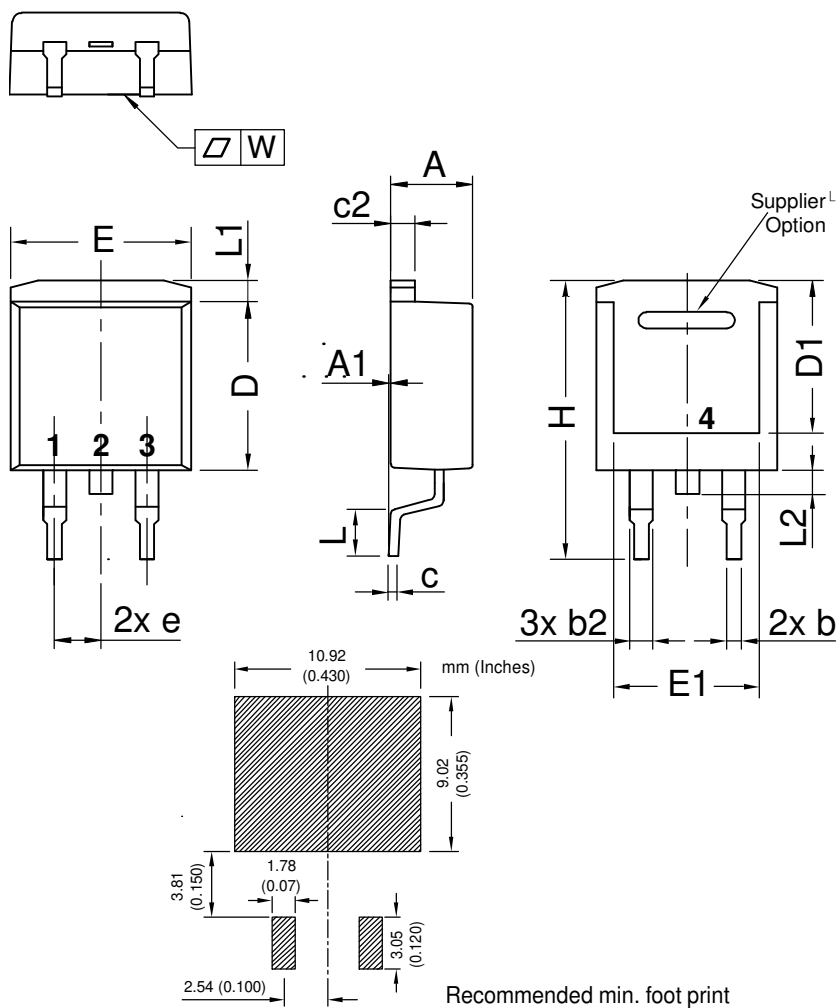
0.76

V

$R_{0\text{ max}}$ slope resistance *

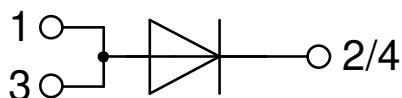
8.1

mΩ

Outlines TO-263 (D2Pak)


Dim.	Millimeter		Inches	
	min	max	min	max
A	4.06	4.83	0.160	0.190
A1	typ. 0.10		typ. 0.004	
A2	2.41		0.095	
b	0.51	0.99	0.020	0.039
b2	1.14	1.40	0.045	0.055
c	0.40	0.74	0.016	0.029
c2	1.14	1.40	0.045	0.055
D	8.38	9.40	0.330	0.370
D1	8.00	8.89	0.315	0.350
D2	2.5		0.098	
E	9.65	10.41	0.380	0.410
E1	6.22	8.50	0.245	0.335
e	2.54 BSC		0.100 BSC	
e1	4.28		0.169	
H	14.61	15.88	0.575	0.625
L	1.78	2.79	0.070	0.110
L1	1.02	1.68	0.040	0.066
W	typ. 0.02	0.040	typ. 0.0008	0.002

All dimensions conform with and/or within JEDEC standard.



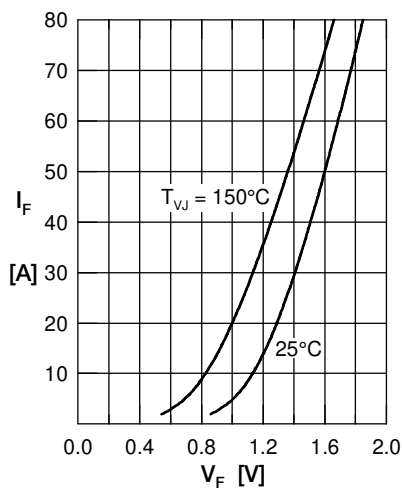
Fast Diode


Fig. 1 Forward current I_F versus V_F

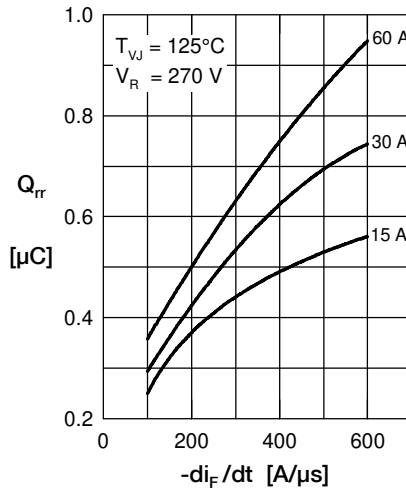


Fig. 2 Typ. reverse recov. charge Q_{rr} versus $-di_F/dt$

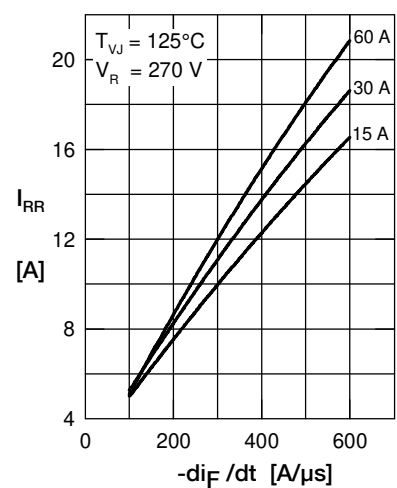


Fig. 3 Typ. reverse recovery current I_{RR} versus $-di_F/dt$

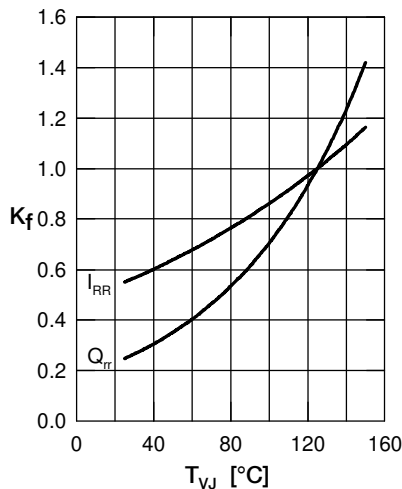


Fig. 4 Typ. dynamic parameters Q_{rr} , I_{RR} versus T_{VJ}

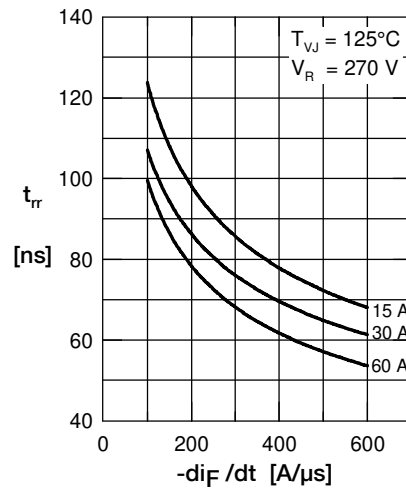


Fig. 5 Typ. reverse recov. time t_{rr} versus $-di_F/dt$

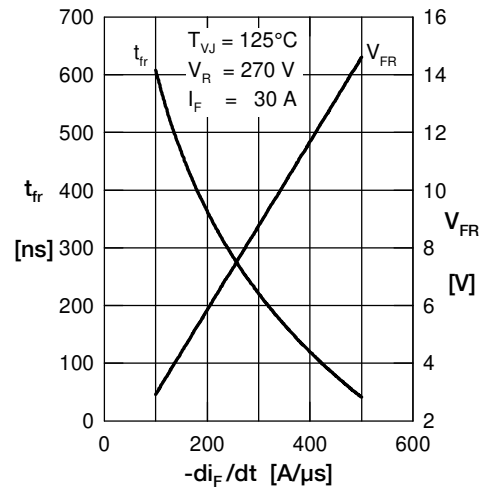


Fig. 6 Typ. forward recov. voltage V_{FR} & time t_{fr} versus di_F/dt

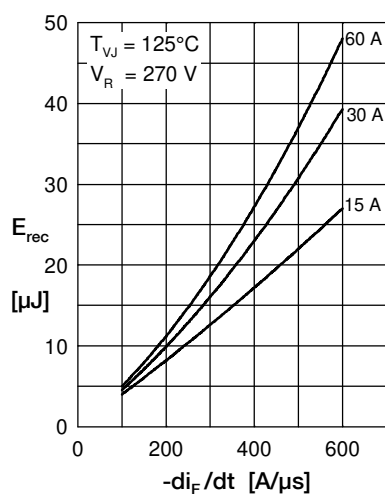


Fig. 7 Typ. recovery energy E_{rec} versus $-di_F/dt$

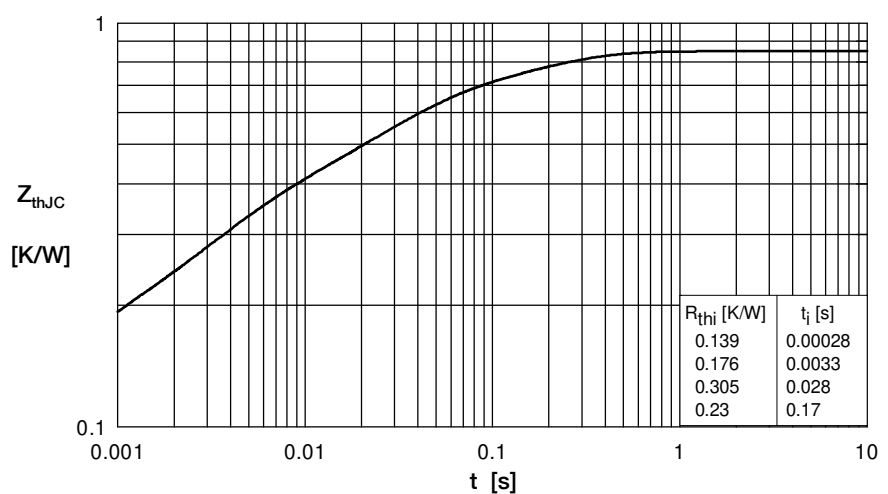


Fig. 8 Transient thermal impedance junction to case

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9