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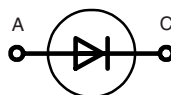
sales@integrated-circuit.com


DSEP 8-03AS

HiPerFRED™ Epitaxial Diode with soft recovery

I_{FAVM} = 8 A
V_{RRM} = 300 V
t_{rr} = 30 ns

V _{RSM} V	V _{RRM} V	Type	Marking on product
300	300	DSEP 8-03AS	8P030AS



TO-252AA (DPAK)



Symbol	Conditions	Maximum Ratings	
I _{FRMS}	T _{VJ} = T _{VJM}	20	A
I _{FAVM} ①	T _C = 152°C; rectangular, d = 0.5	8	A
I _{FRM}	t _p < 10 µs; rep. rating, pulse width limited by T _{VJM}	12	A
I _{FSM}	T _{VJ} = 45°C; t = 10 ms (50 Hz), sine	60	A
E _{AS}	T _{VJ} = 25°C; non-repetitive I _{AS} = 2 A; L = 180 µH	0.5	mJ
I _{AR}	V _A = 1.5·V _R typ.; f = 10 kHz; repetitive	0.2	A
T _{VJ}		-40...+175	°C
T _{VJM}		175	°C
T _{stg}		-40...+150	°C
P _{tot}	T _C = 25°C	60	W
Weight	typ.	0.3	g

Features

- Planar passivated chips
- Very short recovery time
- Extremely low switching losses
- Low I_{RM}-values
- Soft recovery behaviour

Applications

- Anti saturation diode
- Snubber diode
- Free wheeling diode in converters and motor control circuits
- Rectifiers in switch mode power supplies (SMPS)
- Inductive heating and melting
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders

Advantages

- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses
- Operating at lower temperature or space saving by reduced cooling

Symbol	Conditions	Characteristic Values		
		typ.	max.	
I _R	V _R = V _{RRM} ; T _{VJ} = 25°C		60	µA
	V _R = V _{RRM} ; T _{VJ} = 150°C		0.25	mA
V _F	I _F = 8 A; T _{VJ} = 150°C		1.13	V
			1.69	V
R _{thJC}		2.5	K/W	
t _{rr}	I _F = 1 A; -di/dt = 50 A/µs; V _R = 30 V; T _{VJ} = 25°C	30	ns	
I _{RM}	V _R = 100 V; I _F = 12 A; -di _F /dt = 100 A/µs T _{VJ} = 100°C	2	2.4	A

① I_{FAVM} rating includes reverse blocking losses at T_{VJM}, V_R = 0.6 V_{RRM}, duty cycle d = 0.5

Data according to IEC 60747

Dimensions see Outlines.pdf

Recommended replacement:
DPG10IM300UC

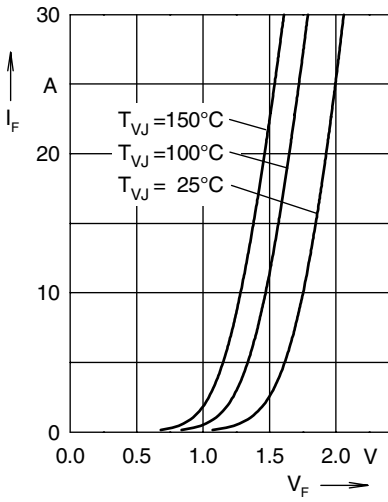


Fig. 1 Forward current I_F versus V_F

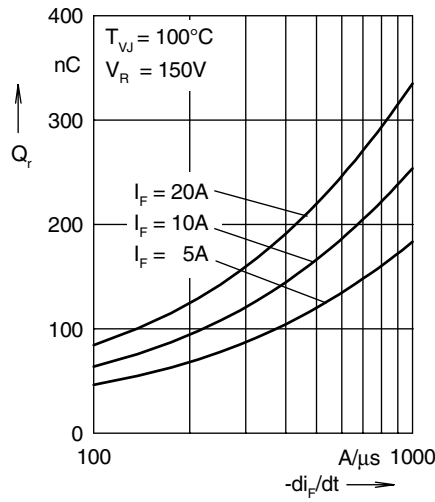


Fig. 2 Reverse recovery charge Q_r versus $-di_F/dt$

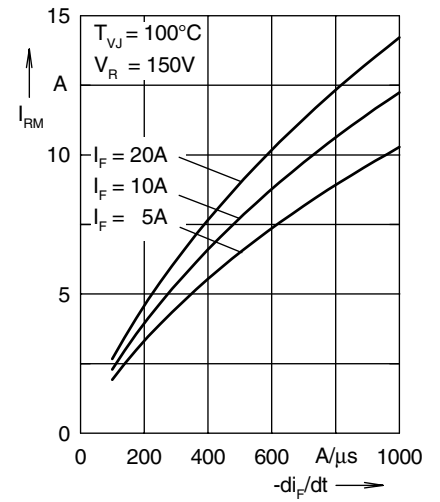


Fig. 3 Peak reverse current I_{RM} versus $-di_F/dt$

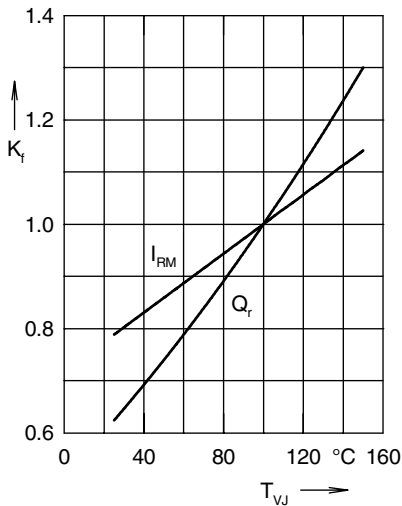


Fig. 4 Dynamic parameters Q_r , I_{RM} versus T_{VJ}

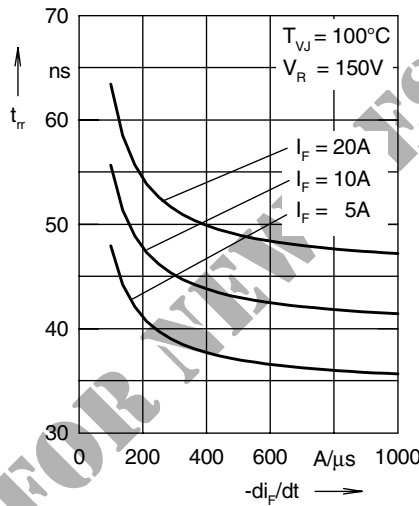


Fig. 5 Recovery time t_{rr} versus $-di_F/dt$

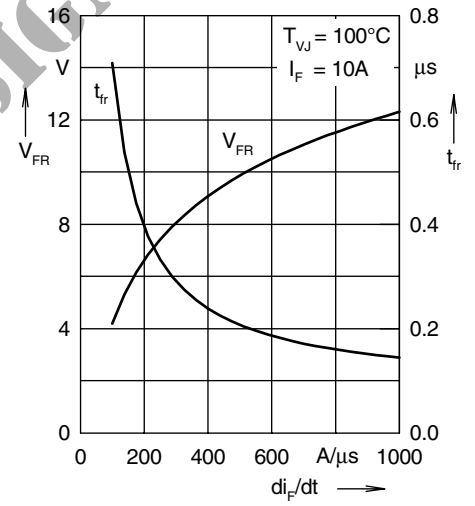


Fig. 6 Peak forward voltage V_{FR} and t_{rr} versus di_F/dt

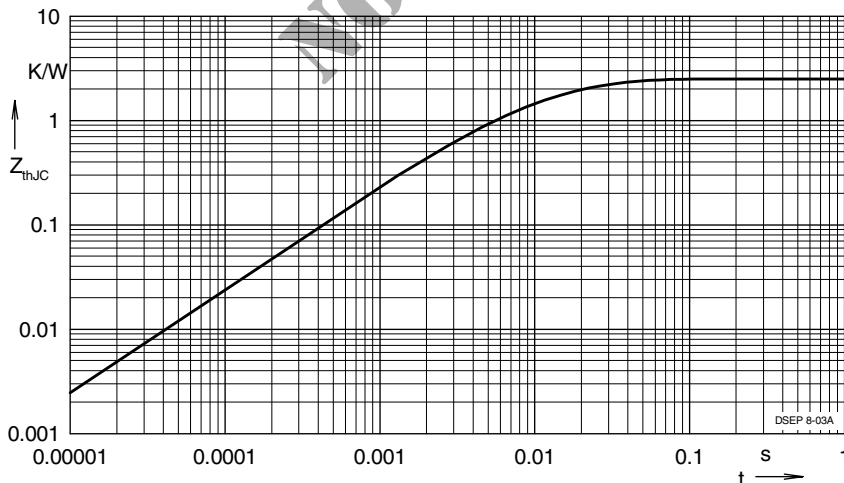


Fig. 7 Transient thermal resistance junction to case

Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	1.449	0.005
2	0.558	0.0003
3	0.493	0.017