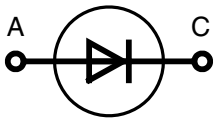
HiPerFRED™ Epitaxial Diode
with soft recovery

I_{FAV} = 60 A
V_{RRM} = 400 V
t_{rr} = 30 ns

V_{RSM} V	V_{RRM} V	Type
400	400	DSEP 60-04A



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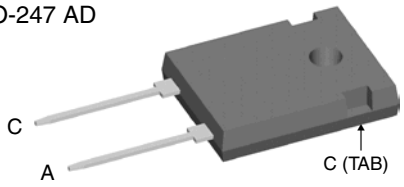

A = Anode, C = Cathode, TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}		70	A
I_{FAVM}	T_C = 120°C; rectangular, d = 0.5	60	A
I_{FSM}	T_{VJ} = 45°C; tp = 10 ms (50 Hz), sine	600	A
E_{AS}	T_{VJ} = 25°C; non-repetitive I_{AS} = 3.5 A; L = 180 µH	1.6	mJ
I_{AR}	$V_A = 1.5 \cdot V_R$ typ.; f = 10 kHz; repetitive	0.4	A
T_{VJ}		-55...+175	°C
T_{VJM}		175	°C
T_{stg}		-55...+150	°C
P_{tot}	T_C = 25°C	230	W
M_d	mounting torque	0.8...1.2	Nm
Weight	typical	6	g

Symbol	Conditions (unless otherwise specified)	Characteristic Values typ.	max.	
I_R ①	T_{VJ} = 25°C; $V_R = V_{RRM}$		650	µA
	T_{VJ} = 150°C; $V_R = V_{RRM}$		2.5	mA
V_F ②	I_F = 60 A; T_{VJ} = 150°C		1.14	V
	T_{VJ} = 25°C		1.50	V
R_{thJC}	$V_{CE} = 0$ V; $V_{GE} = \pm 20$ V		0.65	K/W
R_{thCH}		0.25		K/W
t_{rr}	I_F = 1 A; -di/dt = 300 A/µs; V_R = 30 V; T_{VJ} = 25°C	30		ns
I_{RM}	V_R = 100 V; I_F = 130 A; $-di_F/dt$ = 100 A/µs T_{VJ} = 100°C	6.0	7.5	A

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0%
② Pulse Width = 300 µs, Duty Cycle < 2.0%

Data according to IEC 60747 and per diode unless otherwise specified.

Features
- International standard package
- Planar passivated chips
- Very short recovery time
- Extremely low switching losses
- Low IRM-values
- Soft recovery behaviour
- Epoxy meets UL 94V-0

Applications
- Antiparallel diode for high frequency switching devices
- Antisaturation diode
- Snubber diode
- Free wheeling diode in converters and motor control circuits
- Rectifiers in switch mode power supplies (SMPS)
- Inductive heating
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders

Advantages
- 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

Dimensions see Outlines.pdf

Recommended replacement:
DPG60I400HA

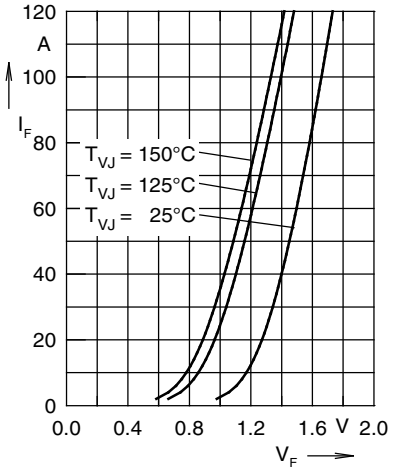

Fig. 1 Forward current I_F versus V_F

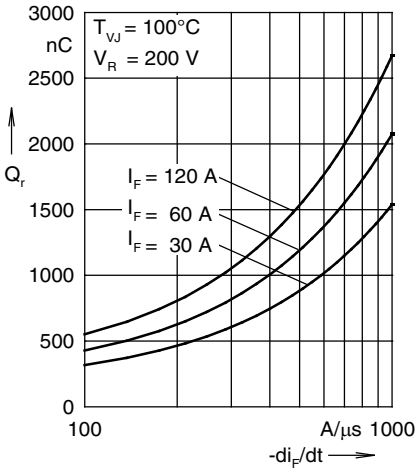

Fig. 2 Typ. reverse recovery charge Q_r

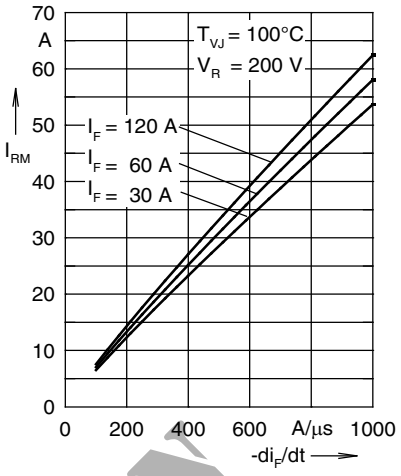

Fig. 3 Typ. peak reverse current I_{RM}

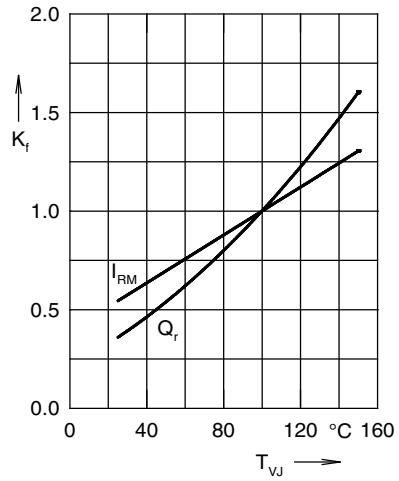

Fig. 4 Typ. dynamic parameters Q_r, I_{RM}

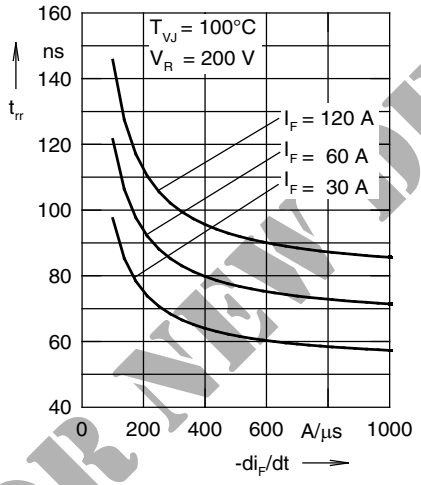

Fig. 5 Typ. recovery time t_{rr} vs. $-di_F/dt$

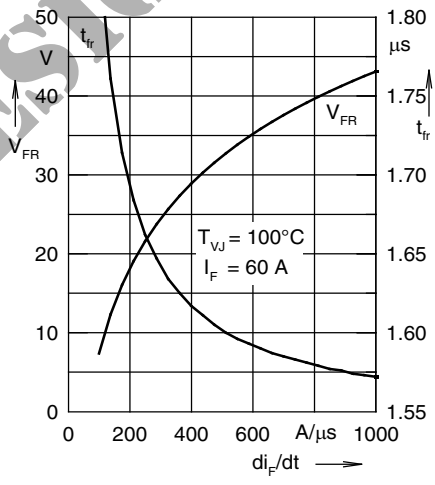

Fig. 6 Typ. peak forward voltage V_{FR} and t_{fr}

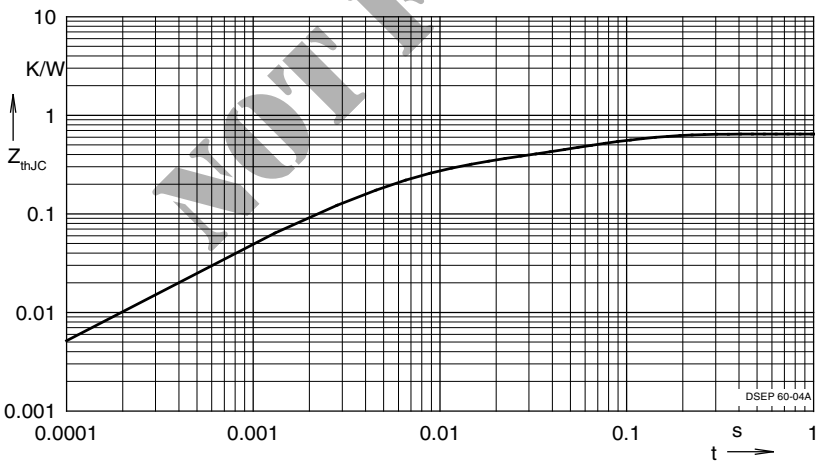

Fig. 7 Transient thermal resistance junction to case

Constants for Z_{thJC} calculation:

i	R_{thi} (K/W)	t_i (s)
1	0.324	0.0052
2	0.125	0.0003
4	0.201	0.0385