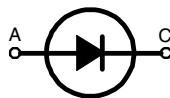


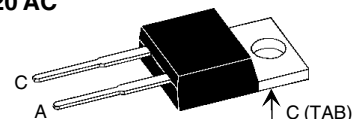
HiPerFRED™ Epitaxial Diode with soft recovery

Preliminary data

V_{RSM} V	V_{RRM} V	Type
600	600	DSEP 15-06B



TO-220 AC



A = Anode, C = Cathode, TAB = Cathode

Symbol	Conditions	Maximum Ratings	
I_{FRMS}	$T_C = 130^\circ\text{C}$; rectangular, $d = 0.5$	35	A
I_{FAVM}		15	A
I_{FSM}	$T_{VJ} = 45^\circ\text{C}$; $t_p = 10$ ms (50 Hz), sine	110	A
E_{AS}	$T_{VJ} = 25^\circ\text{C}$; non-repetitive; $I_{AS} = 1$ A; $L = 100$ μH $L = 20$ mH	0.1	mJ
		20	mJ
I_{AR}	$V_A = 1.5 \cdot V_R$ typ.; $f = 10$ kHz; repetitive	0.1	A
T_{VJ}		-55...+175	$^\circ\text{C}$
T_{VJM}		175	$^\circ\text{C}$
T_{stg}		-55...+150	$^\circ\text{C}$
P_{tot}	$T_C = 25^\circ\text{C}$	95	W
M_d	mounting torque	0.4...0.6	Nm
Weight	typical	2	g

Symbol	Conditions	Characteristic Values	
		typ.	max.
I_R ①	$T_{VJ} = 25^\circ\text{C}$ $V_R = V_{RRM}$	100	μA
	$T_{VJ} = 150^\circ\text{C}$ $V_R = V_{RRM}$	0.5	mA
V_F ②	$I_F = 15$ A; $T_{VJ} = 150^\circ\text{C}$ $T_{VJ} = 25^\circ\text{C}$	1.55	V
		2.52	V
R_{thJC}		1.6	K/W
R_{thCH}		0.5	K/W
t_{rr}	$I_F = 1$ A; $-di/dt = 100$ A/ μs ; $V_R = 30$ V; $T_{VJ} = 25^\circ\text{C}$	25	ns
I_{RM}	$V_R = 100$ V; $I_F = 25$ A; $-di_F/dt = 100$ A/ μs $T_{VJ} = 100^\circ\text{C}$	2.6	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

IXYS reserves the right to change limits, test conditions and dimensions.

$$I_{FAV} = 15 \text{ A}$$

$$V_{RRM} = 600 \text{ V}$$

$$t_{rr} = 25 \text{ ns}$$

Features

- International standard package
- Planar passivated chips
- Very short recovery time
- Extremely low switching losses
- Low I_{RM} -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 I_{RM} reduces:
 - Power dissipation within the diode
 - Turn-on loss in the commutating switch

Dimensions see pages D4 - 85-86