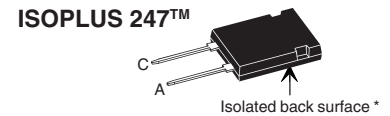
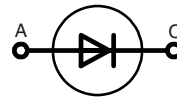


# HiPerDyn™ Schottky Diode

## (Electrically Isolated Back Surface)

$I_{FAV} = 17 \text{ A}$   
 $V_{RRM} = 600 \text{ V}$   
 $t_{rr} = 45 \text{ ns}$

$V_{RSM}$	$V_{RRM}$	Type
V	V	
600	600	DSS 17-06CR



A = Anode, C = Cathode

\* Patent pending

Symbol	Conditions	Maximum Ratings	
$I_{FRMS}$		50	A
$I_{FAVM}$	$T_C = 95^\circ\text{C}$ ; rectangular, $d = 0.5$	17	A
$I_{FRM}$	$t_p < 10 \mu\text{s}$ ; rep. rating, pulse width limited by $T_{VJM}$	tbd	A
$I_{FSM}$	$T_{VJ} = 45^\circ\text{C}$ ; $t_p = 10 \text{ ms}$ (50 Hz), sine	200	A
$E_{AS}$	$I_{AS} = 2 \text{ A}$ ; $L = 100 \mu\text{H}$ ; $T_{VJ} = 25^\circ\text{C}$ ; non-repetitive	0.2	mJ
$I_{AR}$	$V_A = 1.5 \cdot V_R$ typ.; $f = 10 \text{ kHz}$ ; repetitive	0.2	A
$T_{VJ}$		-55...+175	$^\circ\text{C}$
$T_{VJM}$		175	$^\circ\text{C}$
$T_{stg}$		-55...+150	$^\circ\text{C}$
$P_{tot}$	$T_C = 25^\circ\text{C}$	105	W
$V_{ISOL}$	50/60 Hz RMS; $I_{ISOL} \leq 1 \text{ mA}$	2500	V~
$F_C$	mounting force with clip	20...120	N
Weight	typical	6	g

### Features

- Silicon chip on Direct-Copper-Bond substrate
- High power dissipation
- Isolated mounting surface
- 2500V electrical isolation
- Low cathode to tab capacitance (<25pF)
- 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
- Isolated and UL registered E153432

### 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

Symbol	Conditions	Characteristic Values	
		typ.	max.
$I_R$ ①	$T_{VJ} = 25^\circ\text{C}$ $V_R = V_{RRM}$		0.5 mA
	$T_{VJ} = 125^\circ\text{C}$ $V_R = V_{RRM}$		5 mA
$V_F$ ②	$I_F = 15 \text{ A}$ ; $T_{VJ} = 125^\circ\text{C}$ $T_{VJ} = 25^\circ\text{C}$		2.71 V
			3.32 V
$R_{thJC}$			1.4 K/W
$R_{thCH}$		0.25	K/W
$t_{rr}$	$I_F = 10 \text{ A}$ ; $-di/dt = 100 \text{ A}/\mu\text{s}$ ; $V_R = 100 \text{ V}$ ; $T_{VJ} = 25^\circ\text{C}$	45	ns
$I_{RM}$	$V_R = 100 \text{ V}$ ; $I_F = 10 \text{ A}$ ; $-di_F/dt = 100 \text{ A}/\mu\text{s}$ $T_{VJ} = 25^\circ\text{C}$	4.0	A

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0 %  
 ② Pulse Width = 300  $\mu\text{s}$ , Duty Cycle < 2.0 %

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

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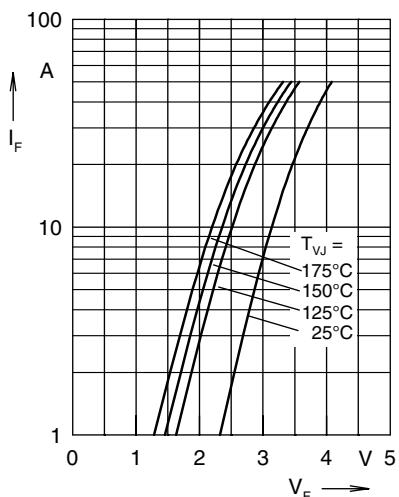


Fig. 1 Maximum forward voltage drop characteristics

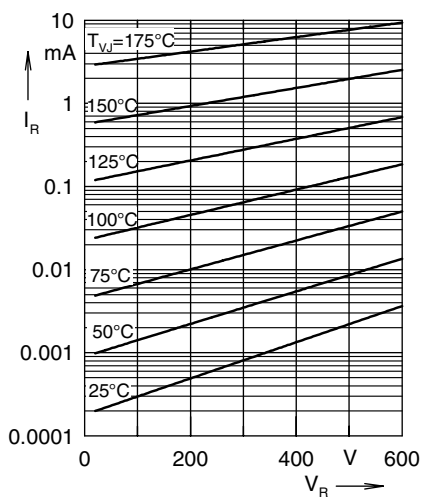


Fig. 2 Typ. value of reverse current  $I_R$  versus reverse voltage  $V_R$

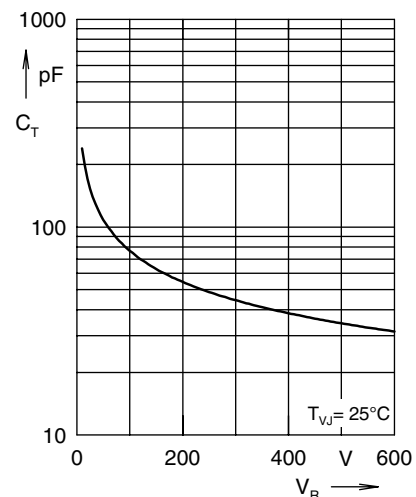


Fig. 3 Typ. junction capacitance  $C_T$  versus reverse voltage  $V_R$

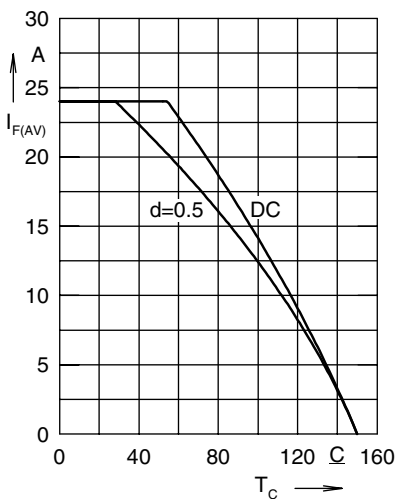


Fig. 4 Average forward current  $I_{F(AV)}$  versus case temperature  $T_C$

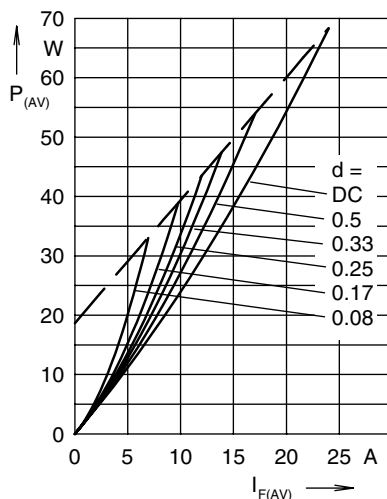


Fig. 5 Forward power loss characteristics

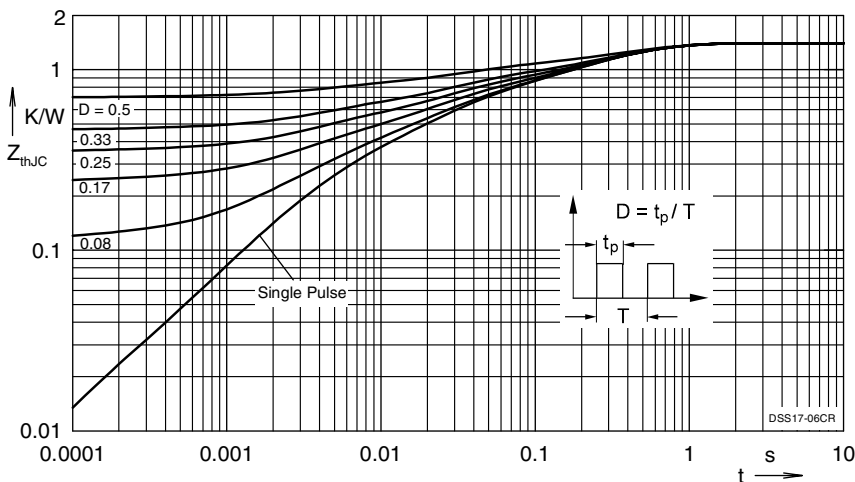


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode

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