

HiPerDynFRED™ Epitaxial Diode

ISOPLUS220™

Electrically Isolated Back Surface

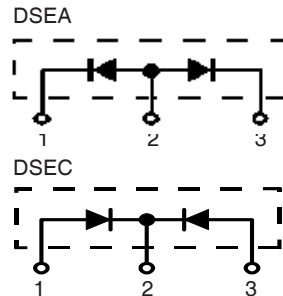
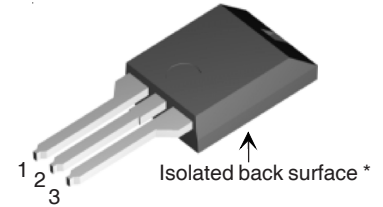
$$I_{FAV} = 2 \times 15 \text{ A}$$

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

$$t_{rr} = 35 \text{ ns}$$

Preliminary Data Sheet

V_{RSM}	V_{RRM}	Type
V	V	
600	600	DSEA29-06AC
600	600	DSEC 29-06AC


ISOPLUS220™
E153432


Symbol	Conditions	Maximum Ratings	
I_{FRMS}		35	A
I_{FAVM}	$T_C = 140^\circ\text{C}$; rectangular, $d = 0.5$	15	A
I_{FSM}	$T_{VJ} = 45^\circ\text{C}$; $t_p = 10 \text{ ms}$ (50 Hz), sine	110	A
E_{AS}	$T_{VJ} = 25^\circ\text{C}$; non-repetitive $I_{AS} = 0.9 \text{ A}$; $L = 180 \mu\text{H}$	0.1	mJ
I_{AR}	$V_A = 1.5 \cdot V_R$ typ.; $f = 10 \text{ kHz}$; 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
V_{ISOL}	50/60 Hz RMS; $I_{ISOL} \leq 1 \text{ mA}$	2500	V~
F_C	mounting force with clip	11...65 / 2.5...15	N / lb
Weight	typical	3	g

Features

- ▮ Silicon chip on Direct-Copper-Bond substrate
- ▮ High power dissipation
- ▮ Isolated mounting surface
- ▮ 2500V electrical isolation
- ▮ Low cathode to tab capacitance (<15pF)
- ▮ 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

Symbol	Conditions	Characteristic Values	
		typ.	max.
I_R ①	$T_{VJ} = 25^\circ\text{C}$ $V_R = V_{RRM}$ $T_{VJ} = 150^\circ\text{C}$ $V_R = V_{RRM}$		100 μA 0.5 mA
V_F ②	$I_F = 15 \text{ A}$; $T_{VJ} = 150^\circ\text{C}$ $T_{VJ} = 25^\circ\text{C}$		1.34 V 2.03 V
R_{thJC} R_{thCH}		0.6	1.6 K/W K/W
t_{rr}	$I_F = 1 \text{ A}$; $-di/dt = 50 \text{ A}/\mu\text{s}$; $V_R = 30 \text{ V}$; $T_{VJ} = 25^\circ\text{C}$	35	ns
I_{RM}	$V_R = 100 \text{ V}$; $I_F = 25 \text{ A}$; $-di_F/dt = 100 \text{ A}/\mu\text{s}$ $T_{VJ} = 100^\circ\text{C}$	4	4.9 A

Notes: Data given for $T_{VJ} = 25^\circ\text{C}$ and per diode unless otherwise specified
 See DSEC 29-06A for electrical characteristic curves
 ② Pulse test: pulse Width = 5 ms, Duty Cycle < 2.0 %
 ③ Pulse test: pulse Width = 300 μs , Duty Cycle < 2.0 %

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

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ISOPLUS220 OUTLINE

