

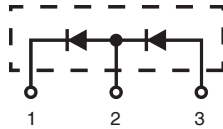
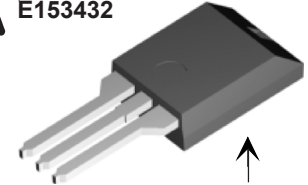
**HiPerDynFRED™ Epitaxial Diode****ISOPLUS220™****Electrically Isolated Back Surface**

$$I_{FAV} = 6 \text{ A}$$

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

$$t_{rr} = 20 \text{ ns}$$

| $V_{RRM}^{①}$<br>V | $V_{RRM}$<br>V | Type        |
|--------------------|----------------|-------------|
| 600                | 300            | DSEE 6-06CC |

ISOPLUS 220  
E153432

Isolated back surface\*

| Symbol     | Conditions                                                                                       | Maximum Ratings    |                  |
|------------|--------------------------------------------------------------------------------------------------|--------------------|------------------|
| $I_{FRMS}$ |                                                                                                  | 20                 | A                |
| $I_{FAVM}$ | $T_C = 150^\circ\text{C}$ ; rectangular, $d = 0.5$                                               | 6                  | A                |
| $E_{AS}$   | $T_{VJ} = 25^\circ\text{C}$ ; non-repetitive<br>$I_{AS} = 0.8 \text{ A}$ ; $L = 180 \mu\text{H}$ | 0.1                | mJ               |
| $I_{AR}$   | $V_A = 1.5 \cdot V_R$ typ.; $f = 10 \text{ kHz}$ ; repetitive                                    | 0.1                | A                |
| $T_{VJ}$   |                                                                                                  | -40...+175         | $^\circ\text{C}$ |
| $T_{VJM}$  |                                                                                                  | 175                | $^\circ\text{C}$ |
| $T_{sig}$  |                                                                                                  | -40...+150         | $^\circ\text{C}$ |
| $P_{tot}$  | $T_C = 25^\circ\text{C}$                                                                         | 50                 | W                |
| $V_{ISOL}$ | 50/60 Hz RMS; $I_{ISOL} \leq 1 \text{ mA}$                                                       | 2500               | V~               |
| $F_C$      | Mounting force                                                                                   | 11...65 / 2.4...11 | N / lb           |
| Weight     | typical                                                                                          | 2                  | g                |

**Features**

- λ Silicon chip on Direct-Copper-Bond substrate
- High power dissipation
- Isolated mounting surface
- 2500V electrical isolation
- λ Low cathode to tab capacitance (<15pF)
- λ Planar passivated chips
- λ Very short recovery time
- λ Extremely low switching losses
- λ Low  $I_{RM}$ -values
- λ Soft recovery behaviour
- λ Epoxy meets UL 94V-0

**Applications**

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

**Advantages**

- λ Avalanche voltage rated for reliable operation
- λ Soft reverse recovery for low EMI/RFI
- λ Low  $I_{RM}$  reduces:
  - Power dissipation within the diode
  - Turn-on loss in the commutating switch

| Symbol                   | Conditions                                                                                                            | Characteristic Values |                            |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|
|                          |                                                                                                                       | typ.                  | max.                       |
| $I_R^{①}$                | $T_{VJ} = 25^\circ\text{C}$ $V_R = V_{RRM}$<br>$T_{VJ} = 150^\circ\text{C}$ $V_R = V_{RRM}$                           |                       | 25 $\mu\text{A}$<br>0.2 mA |
| $V_F^{③}$                | $I_F = 10 \text{ A}$ ; $T_{VJ} = 125^\circ\text{C}$<br>$T_{VJ} = 25^\circ\text{C}$                                    |                       | 1.35 V<br>1.8 V            |
| $R_{thJC}$<br>$R_{thCH}$ |                                                                                                                       | 0.6                   | 3.0 K/W<br>K/W             |
| $t_{rr}$                 | $I_F = 1 \text{ A}$ ; $-di/dt = 50 \text{ A}/\mu\text{s}$ ;<br>$V_R = 30 \text{ V}$ ; $T_{VJ} = 25^\circ\text{C}$     | 20                    | ns                         |
| $I_{RM}$                 | $V_R = 100 \text{ V}$ ; $I_F = 10 \text{ A}$ ; $-di_F/dt = 100 \text{ A}/\mu\text{s}$<br>$T_{VJ} = 100^\circ\text{C}$ | 2                     | A                          |

Notes: Data given for  $T_{VJ} = 25^\circ\text{C}$  and per diode unless otherwise specified

① Diodes connected in series

② Pulse test: pulse Width = 5 ms, Duty Cycle &lt; 2.0 %

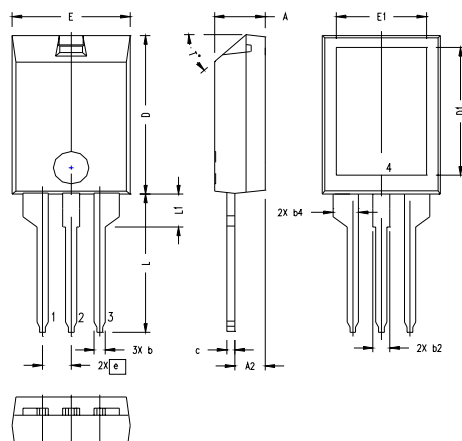
③ Pulse test: pulse Width = 300  $\mu\text{s}$ , Duty Cycle < 2.0 %

**Recommended replacement:**  
**DSEE8-08CC**

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

20080317a

## ISOPLUS220 Outline



| SYM | INCHES     |      | MILLIMETERS |       |
|-----|------------|------|-------------|-------|
|     | MIN        | MAX  | MIN         | MAX   |
| A   | .157       | .197 | 4.00        | 5.00  |
| A2  | .098       | .118 | 2.50        | 3.00  |
| b   | .035       | .051 | 0.90        | 1.30  |
| b2  | .049       | .065 | 1.25        | 1.65  |
| b4  | .093       | .100 | 2.35        | 2.55  |
| c   | .028       | .039 | 0.70        | 1.00  |
| D   | .591       | .630 | 15.00       | 16.00 |
| D1  | .472       | .512 | 12.00       | 13.00 |
| E   | .394       | .433 | 10.00       | 11.00 |
| E1  | .295       | .335 | 7.50        | 8.50  |
| e   | .100 BASIC |      | 2.55 BASIC  |       |
| L   | .512       | .571 | 13.00       | 14.50 |
| L1  | .118       | .138 | 3.00        | 3.50  |
| T*  |            |      | 42.5*       | 47.5* |

## NOTE:

1. Bottom heatsink (Pin 4) is electrically isolated from Pin 1, 2 or 3.
2. Pin connections:
  - 1 - Cathode
  - 2 - Anode/Cathode
  - 3 - Anode