

HiPerDynFRED™ Epitaxial Diode

ISOPLUS220™

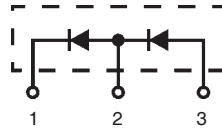
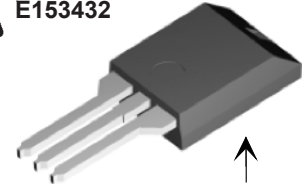
Electrically Isolated Back Surface

$$I_{FAV} = 30 \text{ A}$$

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

$$t_{rr} = 30 \text{ ns}$$

| $V_{RRM}^{①}$ | V_{RRM} | Type |
|---------------|-----------|-------------|
| V | V | |
| 600 | 300 | DSEE29-06CC |


 ISOPLUS 220
 E153432


Isolated back surface*

| Symbol | Conditions | Maximum Ratings | |
|----------------|--|--------------------|------------------|
| I_{FRMS} | | 60 | A |
| $I_{FAVM}^{①}$ | $T_C = 115^\circ\text{C}$; rectangular, $d = 0.5$ | 30 | A |
| I_{FSM} | $T_{VJ} = 45^\circ\text{C}$; $t_p = 10 \text{ ms}$ (50 Hz), sine | 200 | A |
| E_{AS} | $T_{VJ} = 25^\circ\text{C}$; non-repetitive $I_{AS} = 3 \text{ A}$; $L = 180 \mu\text{H}$ | 1.2 | mJ |
| I_{AR} | $V_A = 1.5 \cdot V_R$ typ.; $f = 10 \text{ kHz}$; repetitive | 0.3 | A |
| T_{VJ} | | -55...+175 | $^\circ\text{C}$ |
| T_{VJM} | | 175 | $^\circ\text{C}$ |
| T_{stg} | | -55...+150 | $^\circ\text{C}$ |
| T_L | 1.6 mm (0.063 in) from case for 10 s | 260 | $^\circ\text{C}$ |
| P_{tot} | $T_C = 25^\circ\text{C}$ | 165 | W |
| V_{ISOL} | 50/60 Hz RMS; $I_{ISOL} \leq 1 \text{ mA}$ | 2500 | V~ |
| F_C | Mounting force | 11...65 / 2.5...15 | N / lb |
| Weight | typical | 2 | 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

See DSEP 29-03A data sheet for characteristic curves.

Recommended replacement:
DPG30P300PJ

| Symbol | Conditions | Characteristic Values | |
|--------------------------|---|-----------------------|---------------------------|
| | | typ. | max. |
| $I_R^{②}$ | $T_{VJ} = 25^\circ\text{C}$ $V_R = V_{RRM}$ $T_{VJ} = 150^\circ\text{C}$ $V_R = V_{RRM}^{③}$ | | 100 μA 1 mA |
| $V_F^{③}$ | $I_F = 30 \text{ A}$; $T_{VJ} = 125^\circ\text{C}$ $T_{VJ} = 25^\circ\text{C}$ | | 1.01 V 1.26 V |
| R_{thJC} R_{thCH} | | 0.6 | 0.9 K/W K/W |
| t_{rr} | $I_F = 1 \text{ A}$; $-di/dt = 200 \text{ A}/\mu\text{s}$; $V_R = 30 \text{ V}$ | 30 | ns |
| I_{RM} | $V_R = 100 \text{ V}$; $I_F = 50 \text{ A}$; $-di_F/dt = 100 \text{ A}/\mu\text{s}$ $T_{VJ} = 100^\circ\text{C}$ | 4.5 | 7 A |

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

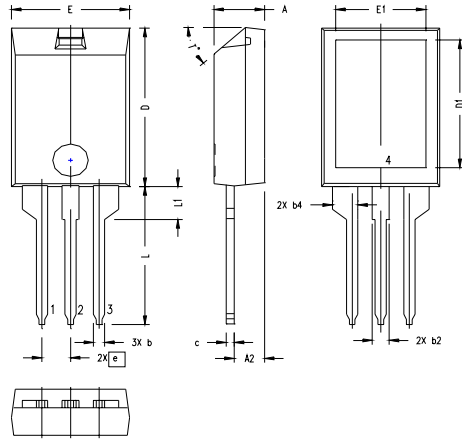
① Diodes connected in series

② Pulse test: pulse Width = 5 ms, Duty Cycle < 2.0 %

③ Pulse test: pulse Width = 300 μs , Duty Cycle < 2.0 %

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

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