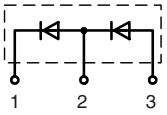
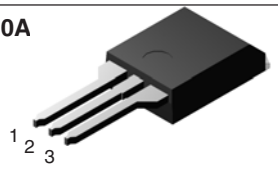
# Gallium Arsenide Schottky Rectifier

Second generation
ISOPLUS220™
Electrically Isolated Back Surface

Preliminary Data

$V_{RRM}$ = **600 V** (2x300V)
$I_{DC}$ = **25 A**
$C_{Junction}$ = **10.7 pF**

| Type | Marking on product | Circuit | Package |
|---|---|---|---|
| **DGSS 10-06CC** | **DGSS 10-06CC** |   | **ISOPLUS220A**   |

**Diode**

| Symbol | Conditions | Maximum Ratings | |
|---|---|---|---|
| $V_{RRM/RSM}$ | (between terminal 1 and 3) | 600 | V |
| $V_{RRM/RSM}$ | | 300 | V |
| $I_{FAV}$ | $T_C$ = 25°C; DC | 25 | A |
| $I_{FAV}$ | $T_C$ = 90°C; DC | 15 | A |
| $I_{FSM}$ | $T_{VJ}$ = 45°C; $t_p$ = 10 ms (50 Hz), sine | 80 | A |
| $P_{tot}$ | $T_C$ = 25°C | 29 | W |

| Symbol | Conditions | | Characteristic Values min. | typ. | max. | |
|---|---|---|---|---|---|---|
| $V_F$ | $I_F$ = 10 A; | $T_{VJ}$ = 25°C | | 1.7 | 2.1 | V |
| | $I_F$ = 10 A; | $T_{VJ}$ = 125°C | | 1.2 | | V |
| $I_R$ | $V_R = V_{RRM}$; | $T_{VJ}$ = 25°C | | | 0.25 | mA |
| | $V_R = V_{RRM}$; | $T_{VJ}$ = 125°C | | 25 | | µA |
| $I_{RM}$ | $I_F$ = 5 A; | -$di_F/dt$ = 150 A/µs; | | 1.4 | | A |
| $t_{rr}$ | $V_R$ = 150 V; | $T_{VJ}$ = 125°C | | 23 | | ns |
| $C_J$ | $V_R$ = 150 V; | $T_{VJ}$ = 125°C | | 10.7 | | pF |
| $R_{thJC}$ | | | | | 5.2 | K/W |

Data according to IEC 60747 and per diode unless otherwise specified

**Features**

*GaAs Schottky Diode with Enhanced Barrier Height:*
- lowest operating forward voltage drop due to additional injection of minority carriers
- high switching speed
  - low junction capacity of GaAs diode independent from temperature
  - short and low reverse recovery current peak due to short lifetime of minority carriers
  - soft turn off
- low leakage current

*ISOPLUS220™ Package:*
- isolated back surface
- low coupling capacy between pins and heatsink
- enlarged creepage
- high reliability
- industry standard outline

**Applications**

*Power Factor Correction (PFC) Switched Mode Power Supplies:*
- AC-DC converters
- DC-DC converters

*with:*
- high switching frequency
- high efficiency
- low EMI

*for use e. g. in:*
- telecom
- computer
- automotive equipment

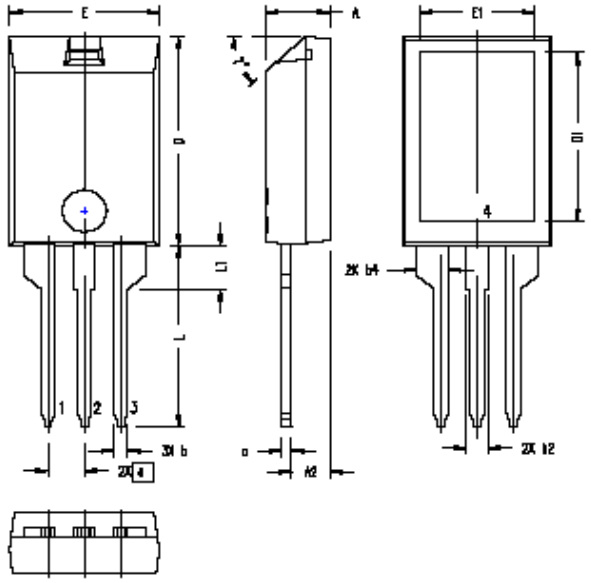
IXYS reserves the right to change limits, Conditions and dimensions.

0515

| Component | | | |
|---|---|---|---|
| **Symbol** | **Conditions** | **Maximum Ratings** | |
| $I_{RMS}$ | per pin | 45 | A |
| $T_{VJ}$ | | -55...+175 | °C |
| $T_{stg}$ | | -55...+150 | °C |
| $V_{ISOL}$ | $I_{ISOL} \leq 1$ mA; 50/60 Hz | 2500 | V~ |
| $F_C$ | mounting force with clip | 10...50 | N |

| **Symbol** | **Conditions** | **Characteristic Values** | | |
|---|---|---|---|---|
| | | **min.** | **typ.** | **max.** |
| $C_p$ | coupling capacity between shorted pins and mounting tab in the case | | 15 | pF |
| $R_{thCS}$ | | | 0.3 | K/W |
| **Weight** | | | 2 | g |

## 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. This drawing will meet dimensional requirement of JEDEC SS Product Outline TO-273 except D and D1 dimension.

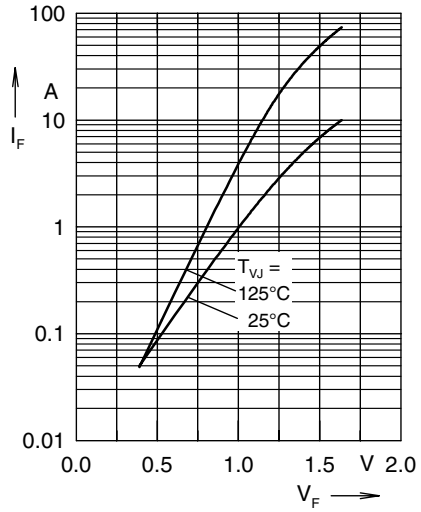



Fig. 1 typ. forward characteristics

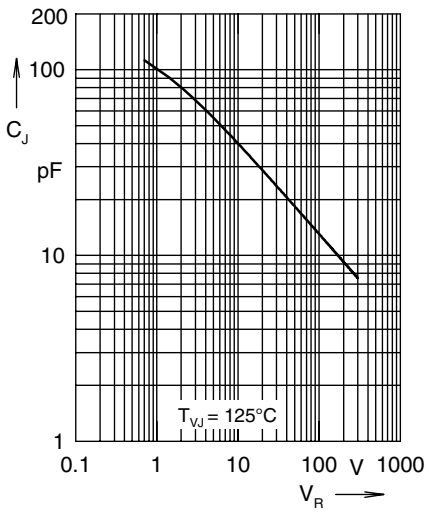



Fig. 2 typ. junction capacity versus blocking voltage

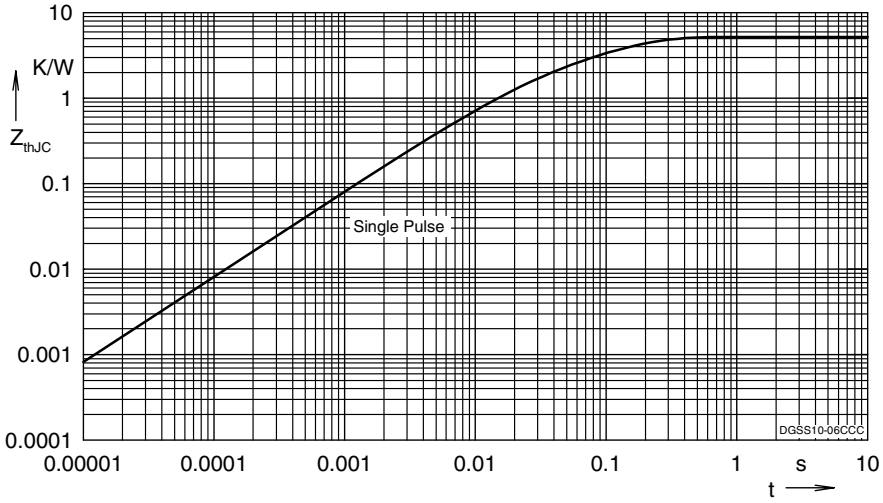



Fig. 3 typ. thermal impedance junction to case