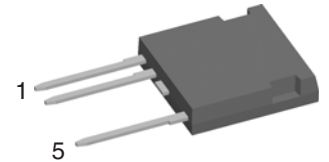
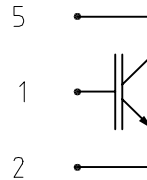


High Voltage BIMOSFET™

in High Voltage ISOPLUS i4-PAC™

Monolithic Bipolar MOS Transistor



$$I_{C25} = 7 \text{ A}$$

$$V_{CES} = 1600 \text{ V}$$

$$V_{CE(sat)} = 4.9 \text{ V}$$

$$t_f = 70 \text{ ns}$$

| IGBT | | |
|-----------------------|--|------------------------|
| Symbol | Conditions | Maximum Ratings |
| V_{CES} | $T_{VJ} = 25^\circ\text{C to } 150^\circ\text{C}$ | 1600 V |
| V_{GES} | | ± 20 V |
| I_{C25} | $T_C = 25^\circ\text{C}$ | 7 A |
| I_{C90} | $T_C = 90^\circ\text{C}$ | 4 A |
| I_{CM} V_{CEK} | $V_{GE} = 10/0 \text{ V}; R_G = 27 \Omega; T_{VJ} = 125^\circ\text{C}$ RBSOA, Clamped inductive load; $L = 100 \mu\text{H}$ | 12 A 0.8· V_{CES} |
| P_{tot} | $T_C = 25^\circ\text{C}$ | 70 W |

| Symbol | Conditions | Characteristic Values ($T_{VJ} = 25^\circ\text{C}$, unless otherwise specified) | | | |
|---|---|--|-------------------------|----------------------|----|
| | | min. | typ. | max. | |
| $V_{CE(sat)}$ | $I_C = 5 \text{ A}; V_{GE} = 15 \text{ V}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$ | | 4.9 5.6 | 7 V V | |
| $V_{GE(th)}$ | $I_C = 0.5 \text{ mA}; V_{GE} = V_{CE}$ | 3.5 | | 5.5 V | |
| I_{CES} | $V_{CE} = 0.8V_{CES}; V_{GE} = 0 \text{ V}; T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$ | | 0.1 | 0.1 mA mA | |
| I_{GES} | $V_{CE} = 0 \text{ V}; V_{GE} = \pm 20 \text{ V}$ | | | 500 nA | |
| $t_{d(on)}$ t_r $t_{d(off)}$ t_f | Inductive load, $T_{VJ} = 125^\circ\text{C}$ $V_{CE} = 960 \text{ V}; I_C = 5 \text{ A}$ $V_{GE} = 10/0 \text{ V}; R_G = 27 \Omega$ | | 140 200 120 70 | ns ns ns ns | |
| C_{ies} | | $V_{CE} = 25 \text{ V}; V_{GE} = 0 \text{ V}; f = 1 \text{ MHz}$ | | 550 | pF |
| Q_{Gon} | | $V_{CE} = 600 \text{ V}; V_{GE} = 10 \text{ V}; I_C = 5 \text{ A}$ | | 34 | nC |
| V_F | | (reverse conduction); $I_F = 5 \text{ A}$ | | 3.6 | V |
| R_{thJC} | | | | 1.75 KW | |

Features

- High Voltage BIMOSFET™
 - substitute for high voltage MOSFETs with significantly lower voltage drop
 - MOSFET compatible control 10 V turn on gate voltage
 - fast switching for high frequency operation
 - reverse conduction capability
- ISOPLUS i4-PAC™ high voltage package
 - isolated back surface
 - enlarged creepage towards heatsink
 - enlarged creepage between high voltage pins
 - application friendly pinout
 - high reliability
 - industry standard outline

Applications

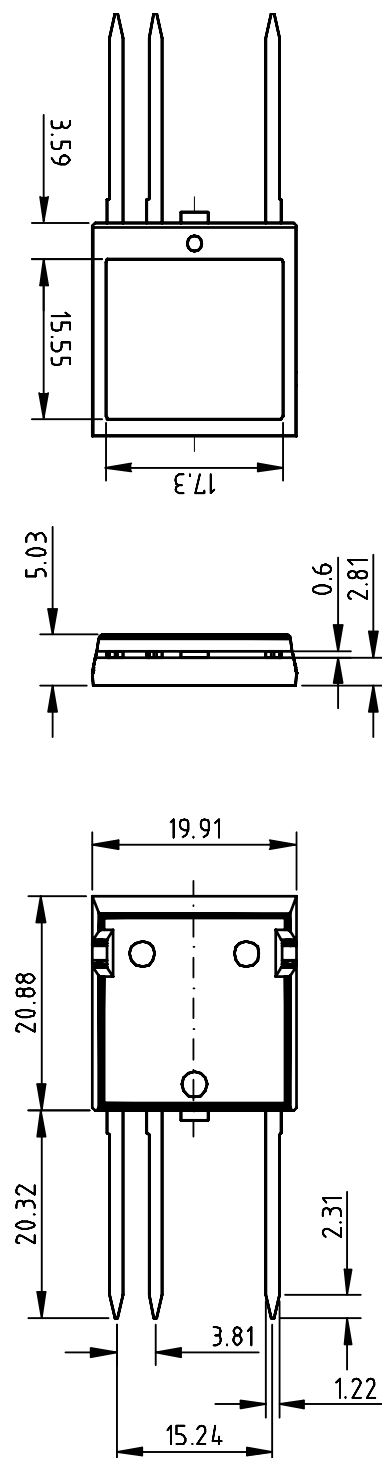
- switched mode power supplies
- DC-DC converters
- resonant converters
- lamp ballasts
- laser generators, x ray generators

Component

| Symbol | Conditions | Maximum Ratings | |
|------------|--|-----------------|----|
| T_{VJ} | | -55...+150 | °C |
| T_{stg} | | -55...+125 | °C |
| V_{ISOL} | $I_{ISOL} \leq 1 \text{ mA}; 50/60 \text{ Hz}$ | 2500 | V~ |
| F_c | mounting force with clip | 20...120 | N |

| Symbol | Conditions | Characteristic Values | | |
|---------------|------------------------|-----------------------|------|------|
| | | min. | typ. | max. |
| d_S, d_A | pin 2 - pin 5 | 7 | | mm |
| d_S, d_A | pin - backside metal | 5.5 | | mm |
| R_{thCH} | with heatsink compound | | 0.15 | K/W |
| Weight | | | 9 | g |

Dimensions in mm (1 mm = 0.0394")



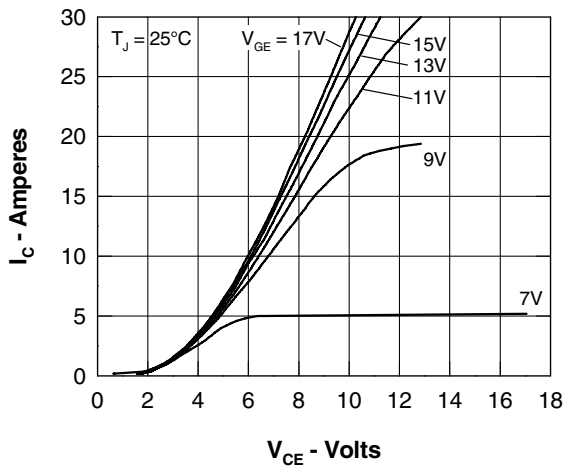


Fig. 1 Typ. Output Characteristics

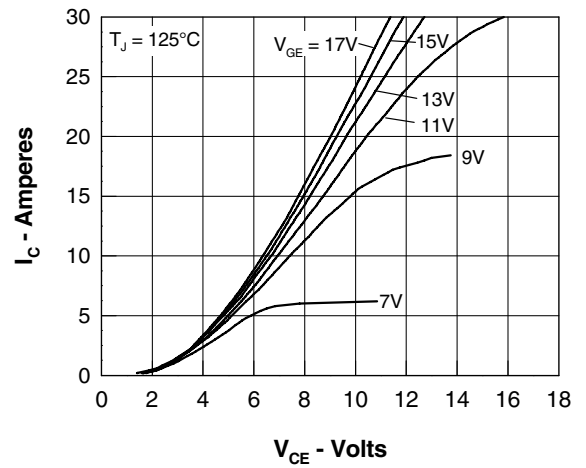


Fig. 2 Typ. Output Characteristics

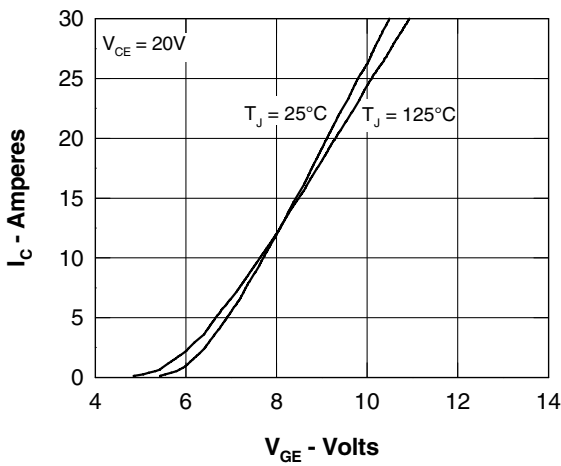


Fig. 3 Typ. Transfer Characteristics

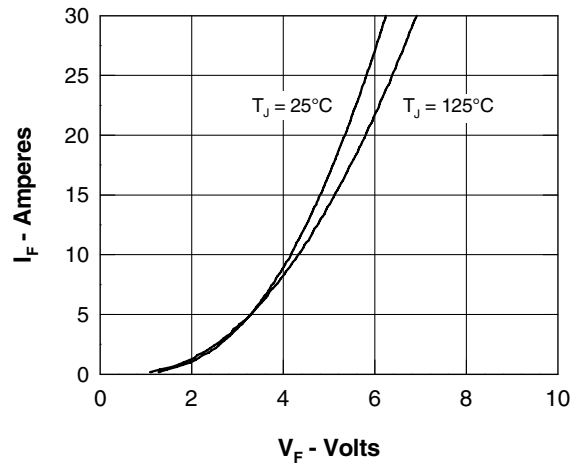


Fig. 4 Typ. Characteristics of Reverse Conduction

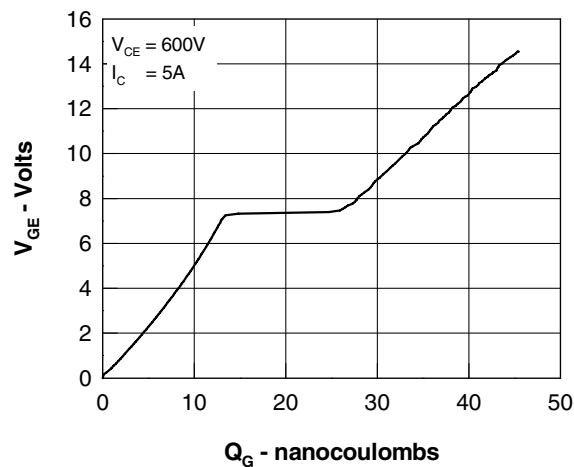


Fig. 5 Typ. Gate Charge characteristics

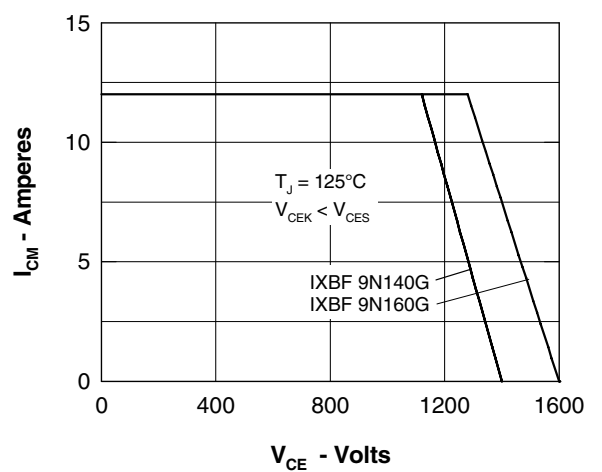


Fig. 6 Reverse Biased Safe Operating Area RBSOA

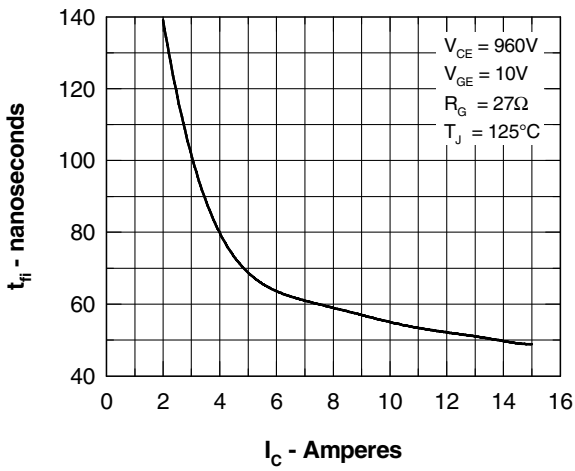


Fig. 7 Typ. Fall Time

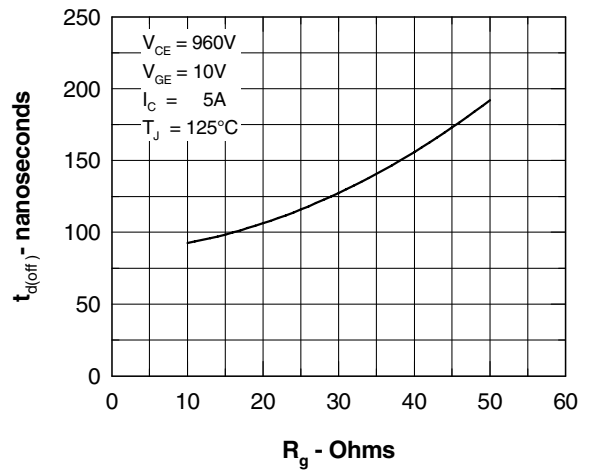


Fig. 8 Typ. Turn Off Delay Time

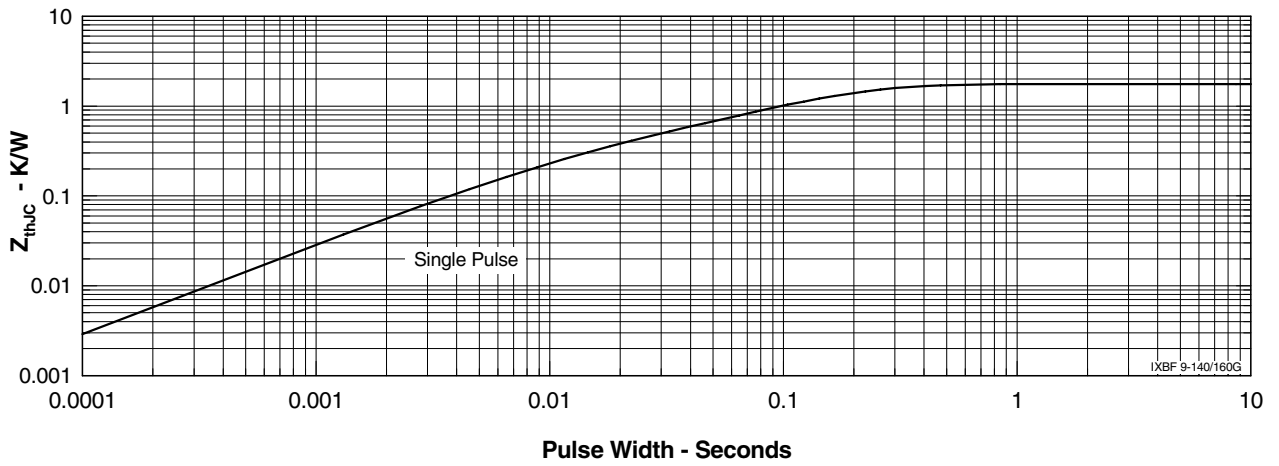


Fig. 9 Typ. Transient Thermal Impedance



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