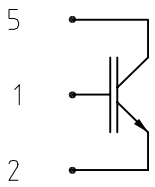
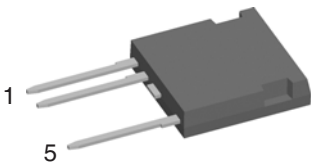
High Voltage BIMOSFET™

in High Voltage ISOPLUS i4-PAC™

Monolithic Bipolar MOS Transistor

I_{C25} = 28 A
V_{CES} = 1600 V
$V_{CE(sat)}$ = 6.2 V
t_f = 40 ns





IGBT

Symbol	Conditions	Maximum Ratings	
V_{CES}	T_{VJ} = 25°C to 150°C	1600	V
V_{GES}		± 20	V
I_{C25}	T_C = 25°C	28	A
I_{C90}	T_C = 90°C	16	A
I_{CM}	V_{GE} = 15/0 V; R_G = 22 Ω; T_{VJ} = 125°C	40	A
V_{CEK}	RBSOA, Clamped inductive load; L = 100 µH	$0.8V_{CES}$	
P_{tot}	T_C = 25°C	250	W

Symbol	Conditions (unless otherwise specified)	Characteristic Values min.	typ.	max.	
$V_{CE(sat)}$	I_C = 20 A; V_{GE} = 15 V; T_{VJ} = 25°C		6.2	7.1	V
	T_{VJ} = 125°C		6.9		V
$V_{GE(th)}$	I_C = 2 mA; V_{GE} = V_{CE}	4		8	V
I_{CES}	V_{CE} = 0.8V_{CES}; V_{GE} = 0 V; T_{VJ} = 25°C			0.4	mA
	T_{VJ} = 125°C		0.8		mA
I_{GES}	V_{CE} = 0 V; V_{GE} = ± 20 V			500	nA
$t_{d(on)}$	Inductive load, T_{VJ} = 125°C		200		ns
t_r	V_{CE} = 960 V; I_C = 25 A		60		ns
$t_{d(off)}$	V_{GE} = 15/0 V; R_G = 22 Ω		300		ns
t_f			40		ns
C_{ies}	V_{CE} = 25 V; V_{GE} = 0 V; f = 1 MHz		3300		pF
Q_{Gon}	V_{CE} = 600V; V_{GE} = 15 V; I_C = 20 A		130		nC
V_F	(reverse conduction); I_F = 20A		2.5		V
R_{thJC}				0.5	K/W

Features

- High Voltage BIMOSFET™
  - substitute for high voltage MOSFETs with significantly lower voltage drop
  - 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

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

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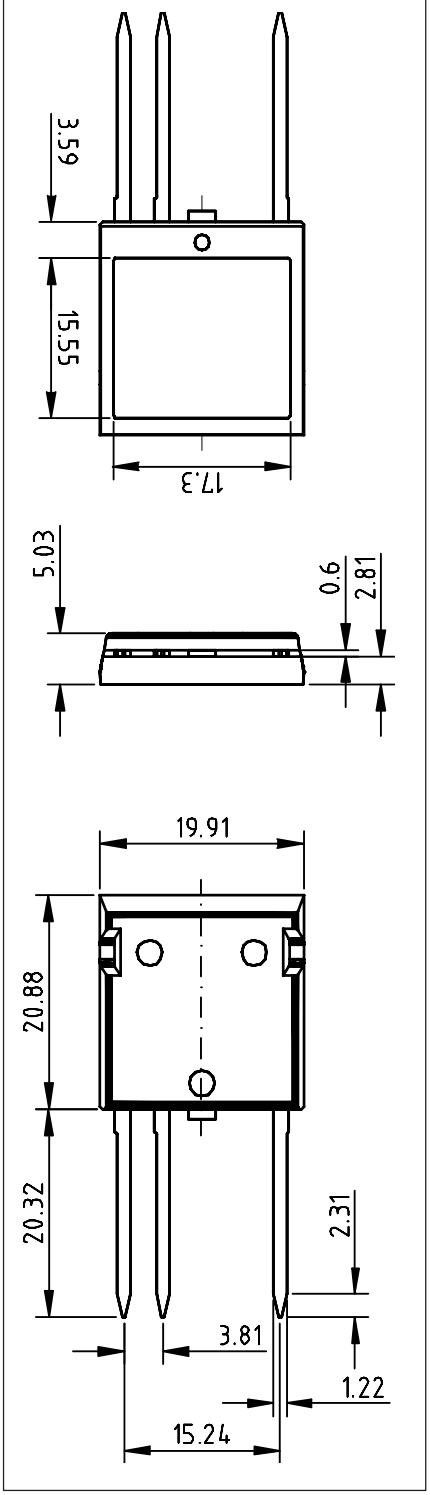
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Component

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

Symbol	Conditions	Characteristic Values min.	typ.	max.	
d_S,d_A	C pin - E pin	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")



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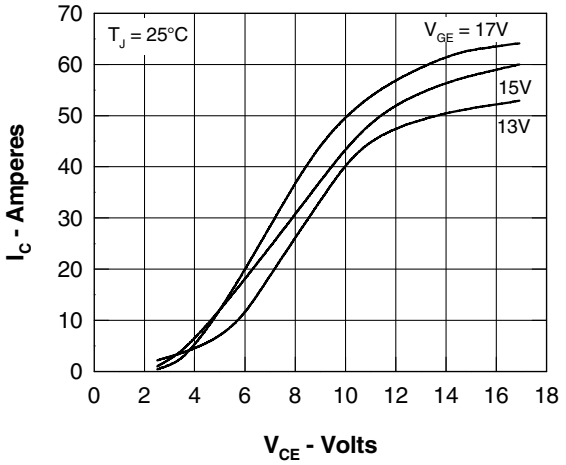


Fig. 1 Typ. Output Characteristics

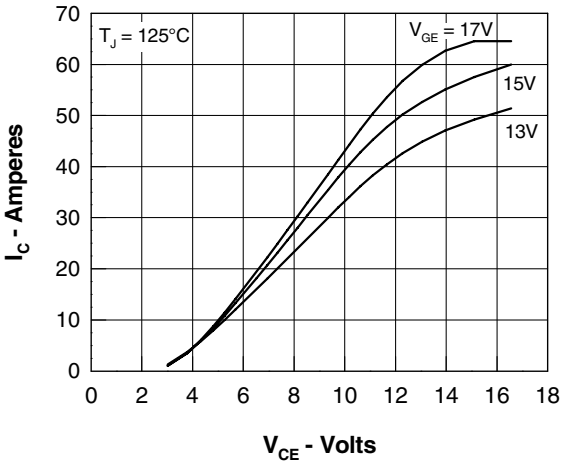


Fig. 2 Typ. Output Characteristics

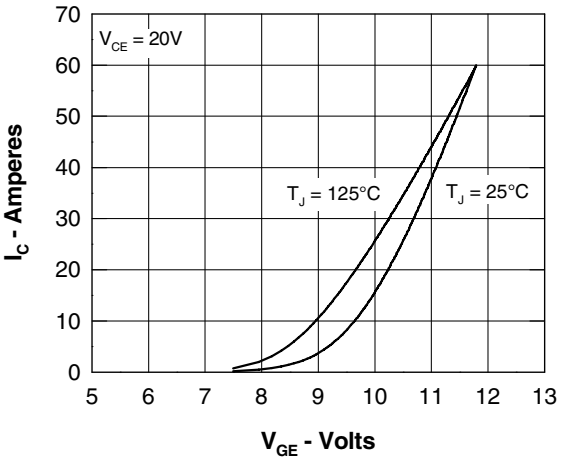


Fig. 3 Typ. Transfer Characteristics

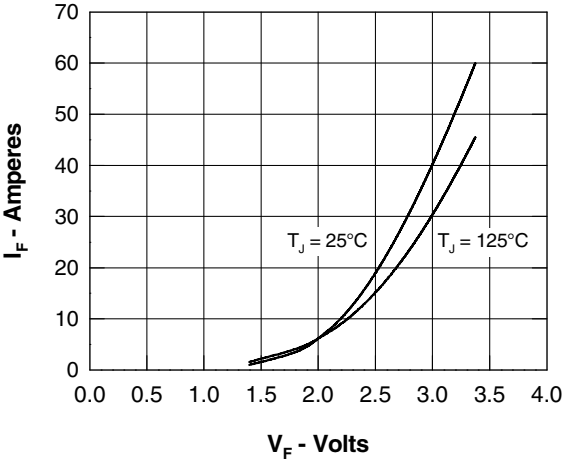


Fig. 4 Typ. Characteristics of Reverse Conduction

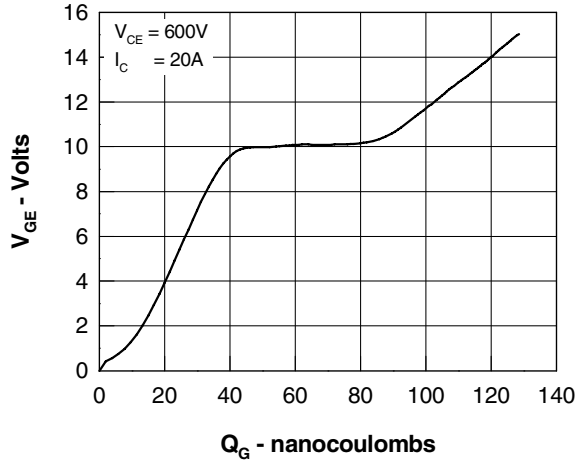


Fig. 5 Typ. Gate Charge characteristics

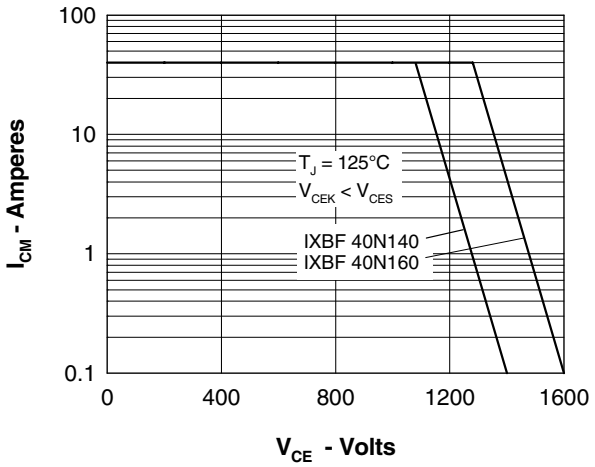


Fig. 6 Reverse Based Safe Operating Area RBSOA

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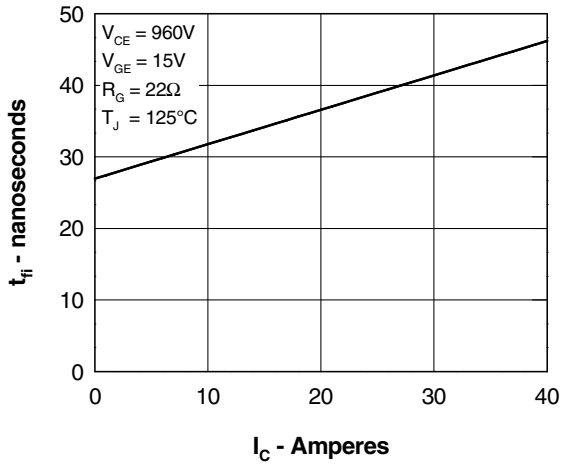


Fig. 7 Typ. Fall Time

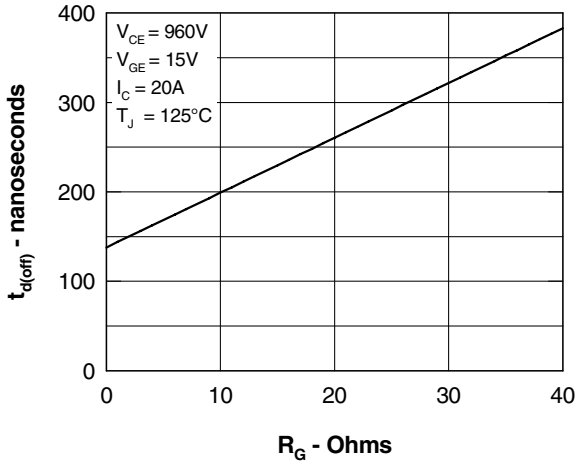


Fig. 8 Typ. Turn Off Delay Time

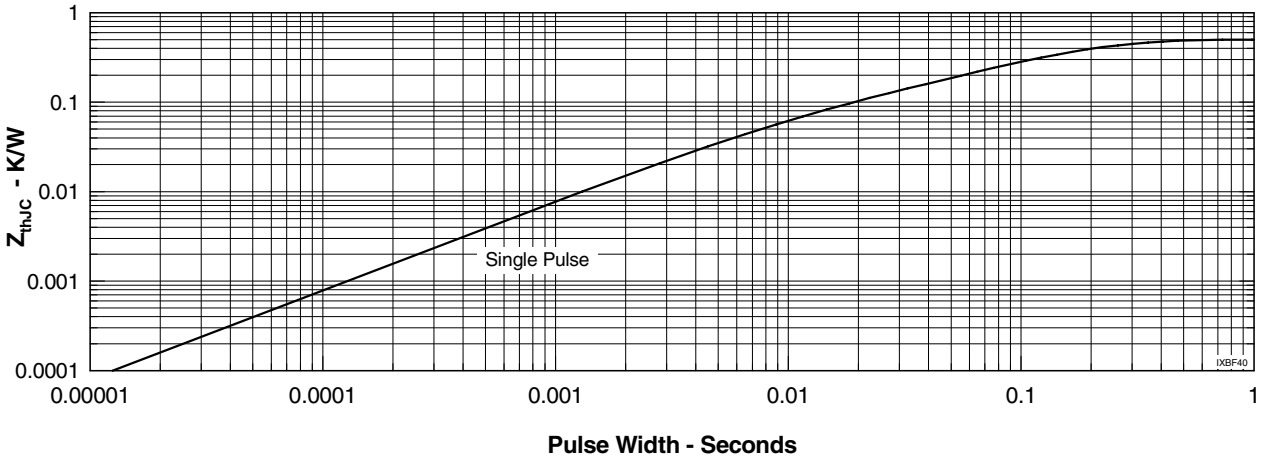


Fig. 9 Typ. Transient Thermal Impedance

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