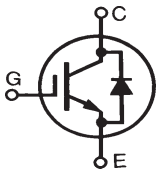
IXYS

High Voltage IGBT with Diode

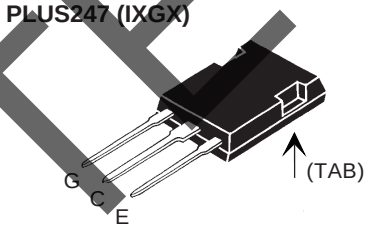
IXGX 32N170AH1

V_{CES} = 1700 V
I_{C25} = 32 A
$V_{CE(sat)}$ = 5.0 V
$t_{fi(typ)}$ = 50 ns



Symbol	Test Conditions	Maximum Ratings	
V_{CES}	T_J = 25°C to 150°C	1700	V
V_{CGR}	T_J = 25°C to 150°C; R_{GE} = 1 MΩ	1700	V
V_{GES}	Continuous	±20	V
V_{GEM}	Transient	±30	V
I_{C25}	T_C = 25°C	32	A
I_{C90}	T_C = 90°C	21	A
I_{F90}		18	A
I_{CM}	T_C = 25°C, 1 ms	110	A
SSOA (RBSOA)	V_{GE} = 15 V, T_{VJ} = 125°C, R_G = 5Ω Clamped inductive load	I_{CM} = 70 @ 0.8 V_{CES}	A
t_{SC}	T_J = 125°C, V_{CE} = 1200 V; V_{GE} = 15 V, R_G = 10Ω	10	µs
P_C	T_C = 25°C	350	W
T_J		-55 ... +150	°C
T_{JM}		150	°C
T_{stg}		-55 ... +150	°C
F_C	Mounting force with clip	22...130/5...30	N/lb
Maximum lead temperature for soldering 1.6 mm (0.062 in.) from case for 10 s		300	°C
Weight		6	g

PLUS247 (IXGX)



G = Gate, C = Collector,
E = Emitter, TAB = Collector

Features
- High current handling capability
- MOS Gate turn-on
  - drive simplicity
- Rugged NPT structure
- Molding epoxies meet UL 94 V-0 flammability classification

Applications
- Capacitor discharge & pulser circuits
- AC motor speed control
- DC servo and robot drives
- DC choppers
- Uninterruptible power supplies (UPS)
- Switched-mode and resonant-mode power supplies

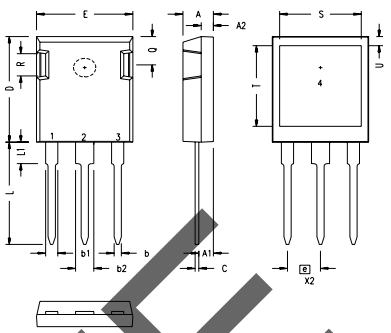
Symbol	Test Conditions		Characteristic Values (T_J = 25°C, unless otherwise specified) min.	typ.	max.	
BV_{CES}	I_C = 1mA, V_{GE} = 0 V		1700			V
$V_{GE(th)}$	I_C = 250 µA, V_{CE} = V_{GE}		3.0		5.0	V
I_{CES}	V_{CE} = 0.8 • V_{CES}	T_J = 25°C			100	µA
	V_{GE} = 0 V	Note 1 T_J = 125°C			3	mA
I_{GES}	V_{CE} = 0 V, V_{GE} = ±20 V				±100	nA
$V_{CE(sat)}$	I_C = I_{C90}, V_{GE} = 15 V	T_J = 25°C		4.0	5.0	V
		T_J = 125°C		4.8		V

Symbol	Test Conditions	Characteristic Values (T_J = 25°C, unless otherwise specified) Min.	Typ.	Max.	
g_{fs}	$I_C = I_{C25}$; V_{CE} = 10 V Note 2	16	30		S
C_{ies}			3670		pF
C_{oes}	V_{CE} = 25 V, V_{GE} = 0 V, f = 1 MHz		185		pF
C_{res}			44		pF
Q_g			157		nC
Q_{ge}	$I_C = I_{C90}$, V_{GE} = 15 V, V_{CE} = 0.5 V_{CES}		25		nC
Q_{gc}			57		nC
$t_{d(on)}$	**Inductive load, T_J = 25°C**		27		ns
t_{ri}	$I_C = I_{C25}$, V_{GE} = 15 V		50		ns
E_{on}	R_G = 2.7 Ω, V_{CE} = 0.5 V_{CES}		4.1		mJ
$t_{d(off)}$			270	500	ns
t_{fi}			50	100	ns
E_{off}			1.25	2.5	mJ
$t_{d(on)}$	**Inductive load, T_J = 125°C**		27		ns
t_{ri}	$I_C = I_{C25}$, V_{GE} = 15 V		47		ns
E_{on}	R_G = 2.7 Ω, V_{CE} = 0.5 V_{CES}		5.2		mJ
$t_{d(off)}$			280		ns
t_{fi}			82		ns
E_{off}			1.7		mJ
R_{thJC}				0.35	K/W
R_{thCK}			0.15		K/W

Reverse Diode (FRED)

Symbol	Test Conditions	Characteristic Values (T_J = 25°C unless otherwise specified) Min.	Typ.	Max.	
V_F	I_F = 60A, V_{GE} = 0 V, Pulse test, t ≤ 300 µs, duty cycle d ≤ 2 %		2.4	2.7	V
		T_J = 150°C	2.4		V
I_{RM}	I_F = 60A, V_{GE} = 0 V, $-di_F/dt$ = 600 A/µs		50		A
	V_R = 1200 V	T_J = 125°C	55		A
t_{rr}			150		ns
		T_J = 125°C	350		ns
R_{thJC}				0.35	K/W

PLUS247 Outline (IXGX)



SYM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS MAX
A	.190	.205	4.83	5.21
A1	.090	.100	2.29	2.54
A2	.075	.085	1.91	2.16
b	.045	.055	1.14	1.40
b1	.075	.084	1.91	2.13
b2	.115	.123	2.92	3.12
C	.024	.031	0.61	0.80
D	.819	.840	20.80	21.34
E	.620	.635	15.75	16.13
e	.215 BSC		5.45 BSC	
L	.780	.800	19.81	20.32
L1	.150	.170	3.81	4.32
Q	.220	.244	5.59	6.20
R	.170	.190	4.32	4.83
S	.520	.540	13.21	13.72
T	.620	.640	15.75	16.26
U	.065	.080	1.65	2.03

1 – GATE
2 – DRAIN (COLLECTOR)
3 – SOURCE (EMITTER)
4 – NO CONNECTION

NOTE: This drawing will meet all dimensions requirement of JEDEC outline TO-247AD except screw hole.

Notes: 1. Device must be heatsunk for high temperature leakage current measurements to avoid thermal runaway.
2. Pulse test, t ≤ 300 µs, duty cycle d ≤ 2 %

Fig. 1. Output Characteristics @ 25ºC

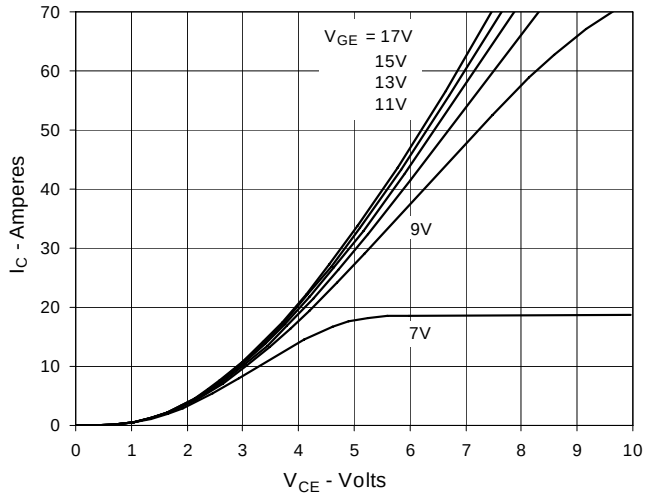


Fig. 2. Exteded Output Characteristics @ 25ºC

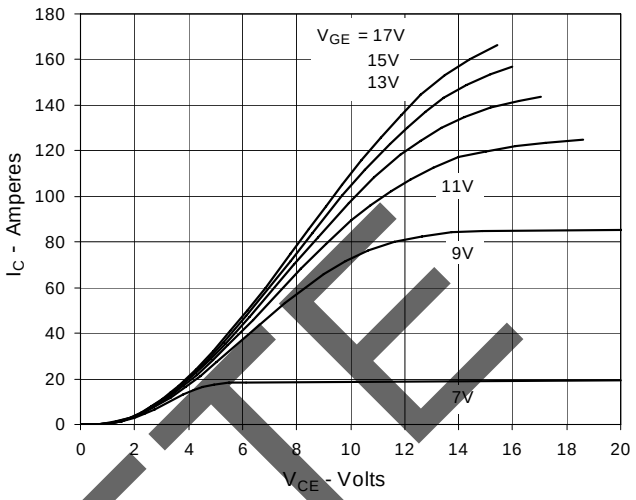


Fig. 3. Output Characteristics @ 125ºC

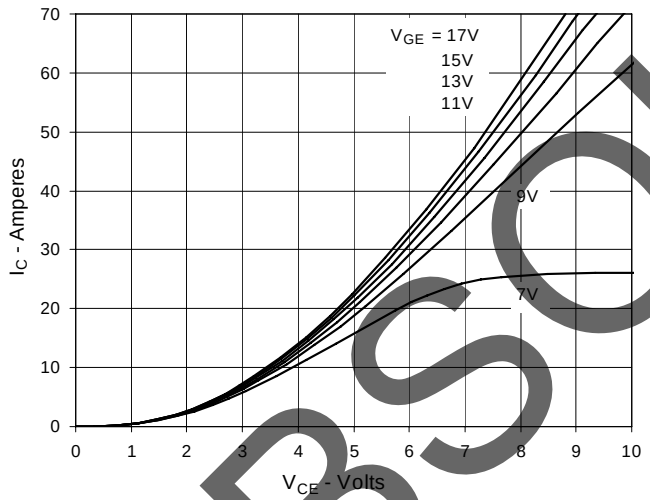


Fig. 4. Dependence of $V_{CE(sat)}$ on Junction Temperature

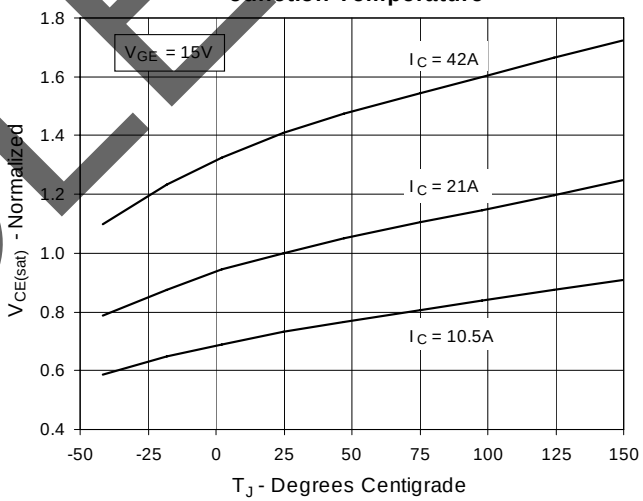


Fig. 5. Collector-to-Emitter Voltage vs. Gate-to-Emitter Voltage

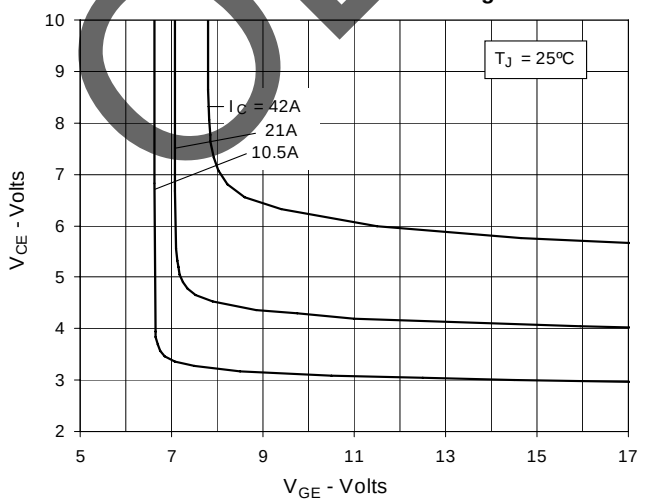


Fig. 6. Input Admittance

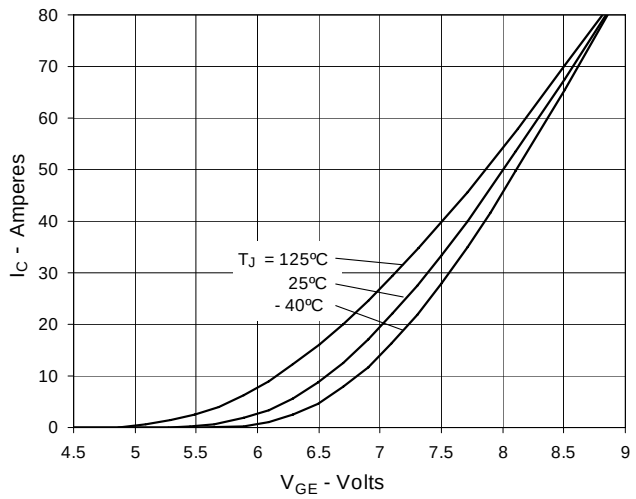


Fig. 7. Transconductance

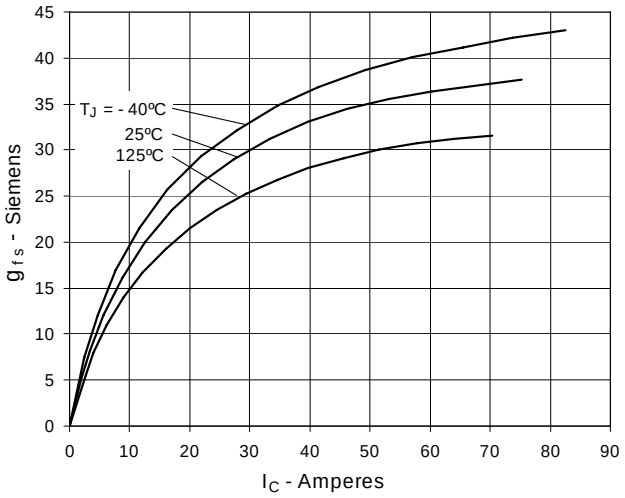


Fig. 8. Inductive Switching Energy Loss vs. Gate Resistance

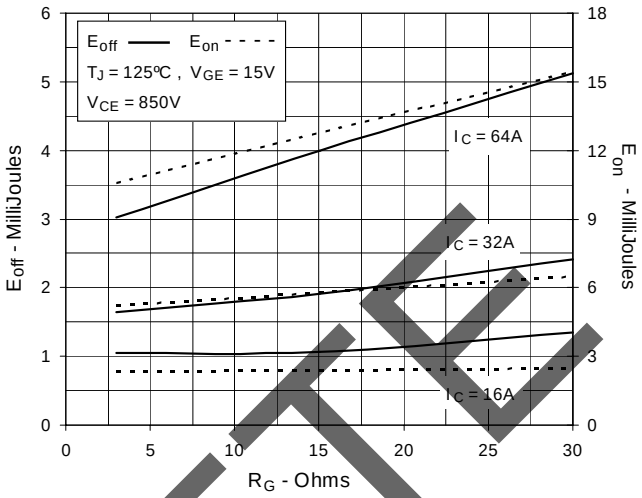


Fig. 9. Inductive Swiching Energy Loss vs. Collector Current

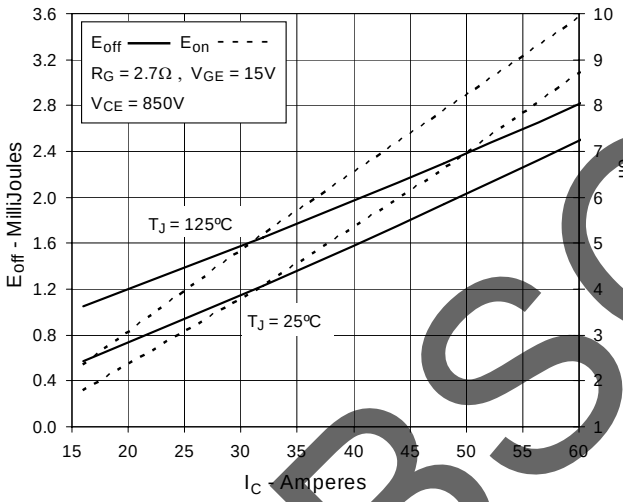


Fig. 10. Inductive Swiching Energy Loss vs. Junction Temperature

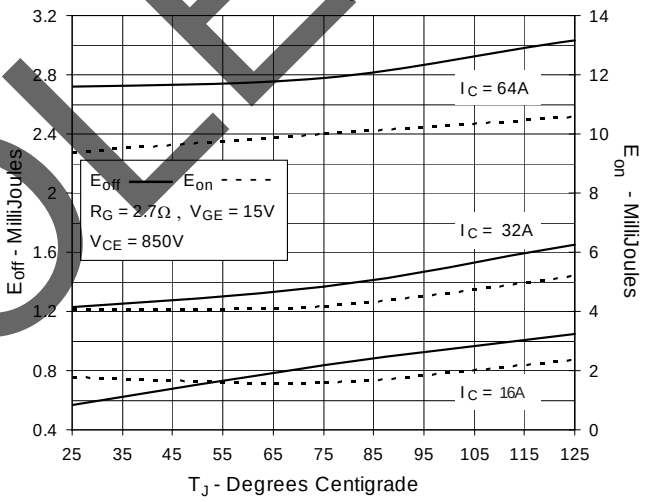


Fig. 11. Gate Charge

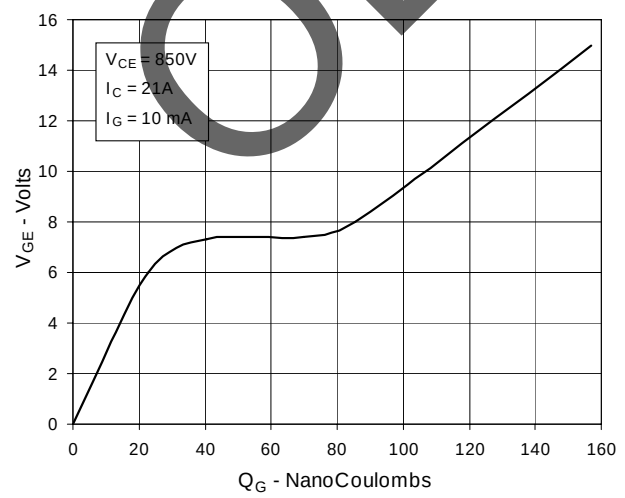


Fig. 12. Capacitance

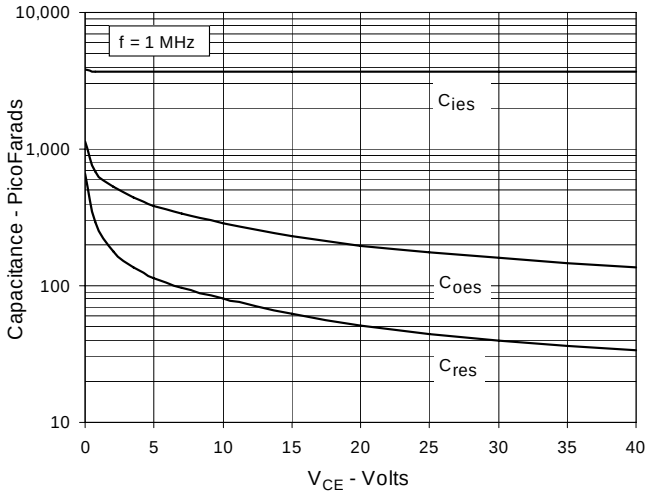


Fig. 13. Reverse-Bias Safe Operating Area

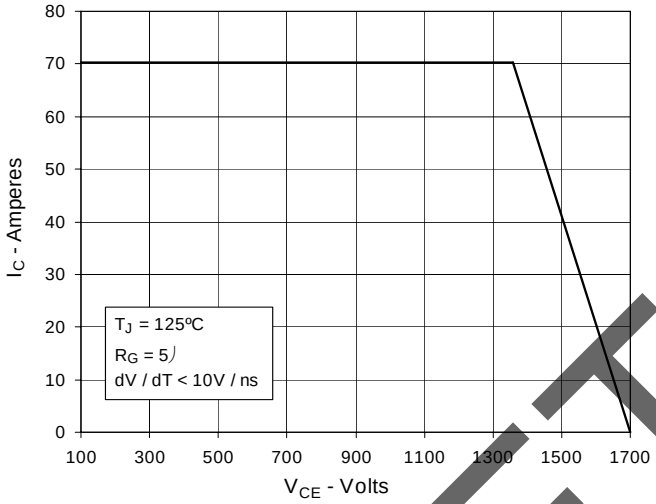
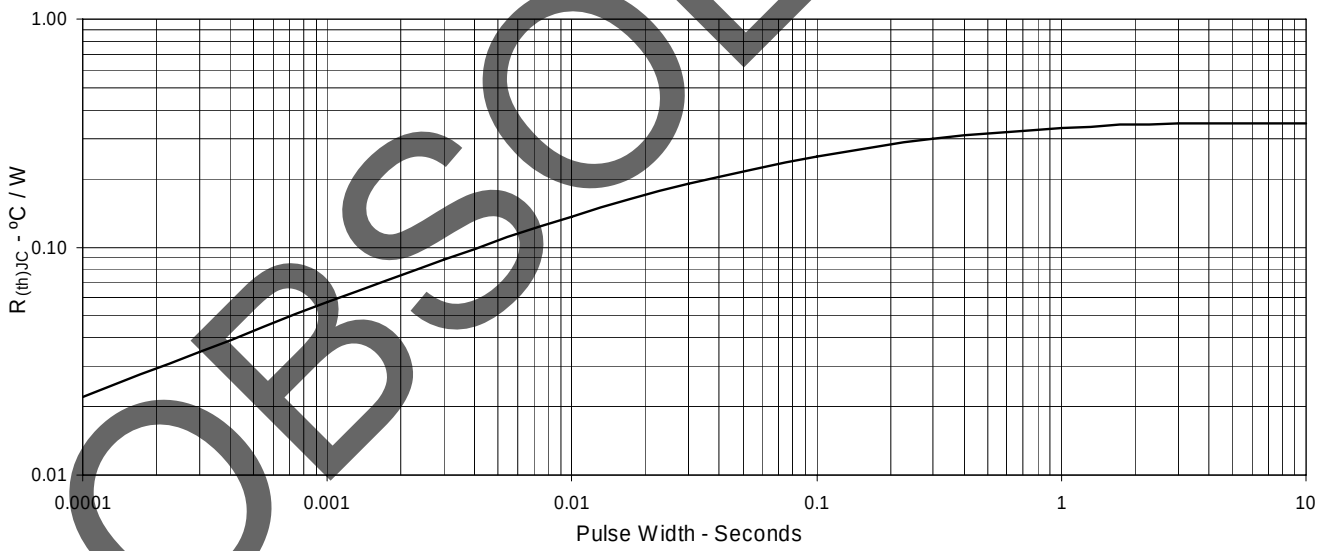


Fig. 14. Maximum Transient Thermal Resistance



Fast Recovery Diode Curves

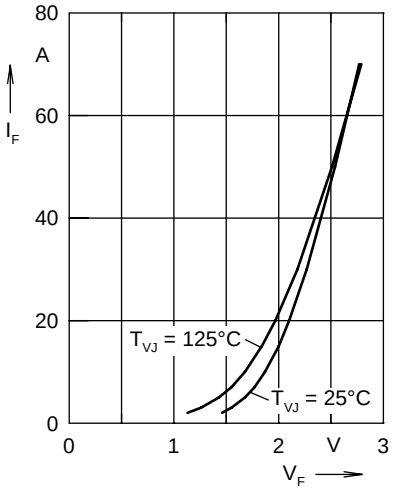


Fig. 15 Typ. forward current I_F versus V_F

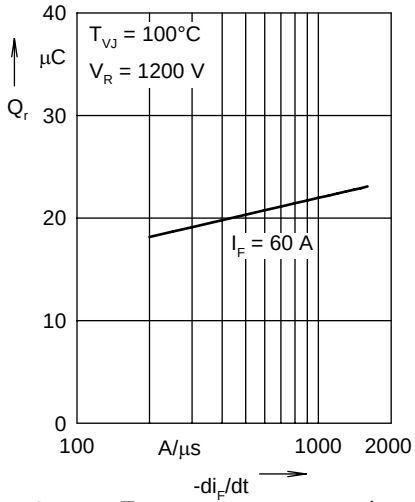


Fig. 16 Typ. reverse recovery charge Q_r versus $-di_F/dt$

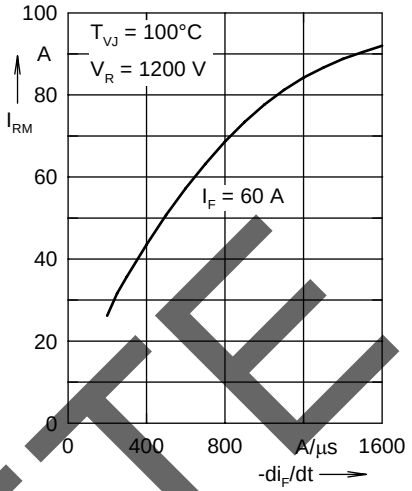


Fig. 17 Typ. peak reverse current I_{RM} versus $-di_F/dt$

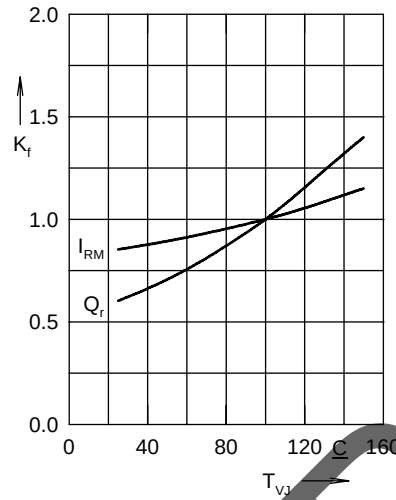


Fig. 18 Dynamic parameters Q_r, I_{RM} versus T_{VJ}

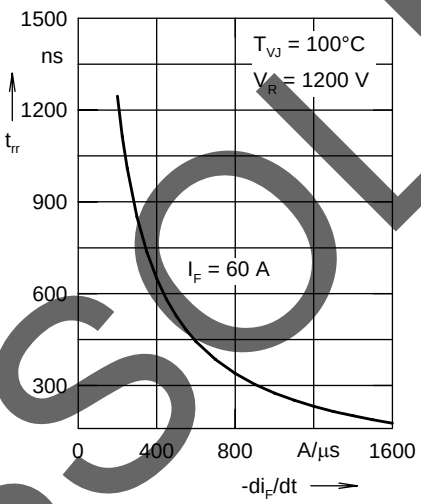


Fig. 19 Typ. recovery time t_{rr} versus $-di_F/dt$

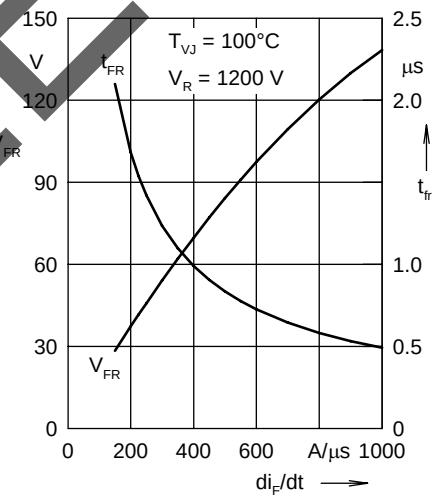


Fig. 20 Typ. peak forward voltage V_{FR} and t_{fr} versus di_F/dt

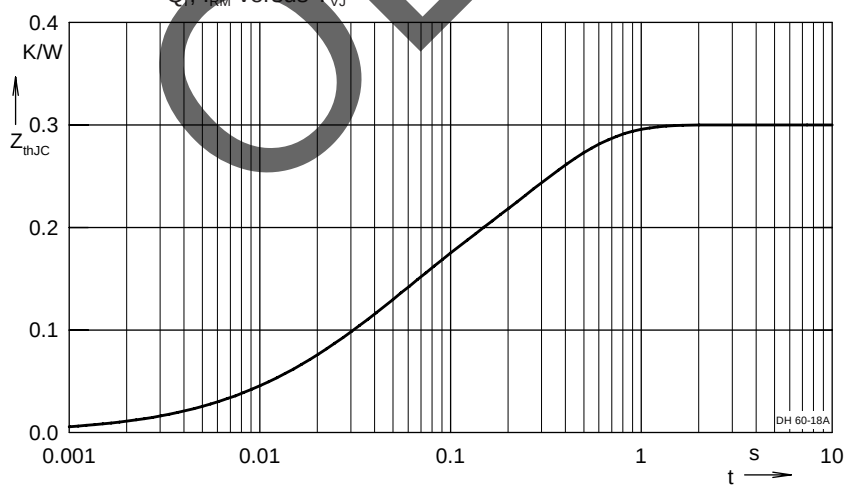


Fig. 21 Transient thermal resistance junction to case

Note: Fig. 16 to Fig. 20 shows typical values

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for IGBT Transistors ***category:***

Click to view products by IXYS ***manufacturer:***

Other Similar products are found below :

748152A APT20GT60BRDQ1G APT50GT60BRG NGTB10N60FG STGFW20V60DF APT30GP60BG APT45GR65B2DU30 GT50JR22(STA1ES) TIG058E8-TL-H IGW40N120H3FKSA1 VS-CPV364M4KPBF NGTB25N120FL2WAG NGTG40N120FL2WG RJH60F3DPQ-A0#T0 APT40GR120B2SCD10 APT15GT120BRG APT20GT60BRG NGTB75N65FL2WAG NGTG15N120FL2WG IXA30RG1200DHGLB IXA40RG1200DHGLB APT70GR65B2DU40 NTE3320 QP12W05S-37A IHFW40N65R5SXKSA1 APT70GR120J APT35GP120JDQ2 IKZA40N65RH5XKSA1 IKFW75N65ES5XKSA1 IKFW50N65ES5XKSA1 IKFW50N65EH5XKSA1 IKFW40N65ES5XKSA1 IKFW60N65ES5XKSA1 IMBG120R090M1HXTMA1 IMBG120R220M1HXTMA1 XD15H120CX1 XD25H120CX0 XP15PJS120CL1B1 IGW30N60H3FKSA1 STGWA8M120DF3 IGW08T120FKSA1 IGW75N60H3FKSA1 FGH60N60SMD_F085 FGH75T65UPD STGWA15H120F2 IKA10N60TXKSA1 IHW20N120R5XKSA1 RJH60D2DPP-M0#T2 IKP20N60TXKSA1 IHW20N65R5XKSA1