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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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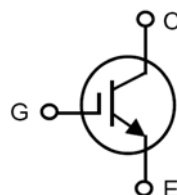
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High Voltage XPT™ IGBT

IXYH8N250C



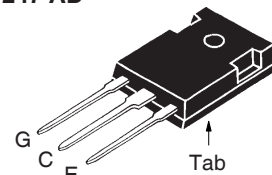
$$V_{CES} = 2500V$$

$$I_{C110} = 8A$$

$$V_{CE(sat)} \leq 4.0V$$

$$t_{fi(typ)} = 86ns$$

TO-247 AD



G = Gate C = Collector
E = Emitter Tab = Collector

Symbol	Test Conditions	Maximum Ratings	
V_{CES}	$T_J = 25^\circ C$ to $175^\circ C$	2500	V
V_{CGR}	$T_J = 25^\circ C$ to $175^\circ C$, $R_{GE} = 1M\Omega$	2500	V
V_{GES}	Continuous	± 20	V
V_{GEM}	Transient	± 30	V
I_{C25}	$T_C = 25^\circ C$	29	A
I_{C110}	$T_C = 110^\circ C$	8	A
I_{CM}	$T_C = 25^\circ C$, 1ms	70	A
SSOA (RBSOA)	$V_{GE} = 15V$, $T_{VJ} = 150^\circ C$, $R_G = 15\Omega$ Clamped Inductive Load	$I_{CM} = 32$ 1500	A V
P_C	$T_C = 25^\circ C$	280	W
T_J		-55 ... +175	$^\circ C$
T_{JM}		175	$^\circ C$
T_{stg}		-55 ... +175	$^\circ C$
T_L	Maximum Lead Temperature for Soldering	300	$^\circ C$
T_{SOLD}	1.6 mm (0.062in.) from Case for 10s	260	$^\circ C$
M_d	Mounting Torque	1.13/10	Nm/lb.in.
Weight		6	g

Features

- High Voltage Package
- High Blocking Voltage
- High Peak Current Capability
- Low Saturation Voltage

Advantages

- Low Gate Drive Requirement
- High Power Density

Applications

- Switch-Mode and Resonant-Mode Power Supplies
- Uninterruptible Power Supplies (UPS)
- Laser Generators
- Capacitor Discharge Circuits
- AC Switches

Symbol	Test Conditions ($T_J = 25^\circ C$, Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{CES}	$I_C = 250\mu A$, $V_{GE} = 0V$	2500		V
$V_{GE(th)}$	$I_C = 250\mu A$, $V_{CE} = V_{GE}$	3.0		5.0 V
I_{CES}	$V_{CE} = V_{CES}$, $V_{GE} = 0V$ $T_J = 150^\circ C$			10 μA 3 mA
I_{GES}	$V_{CE} = 0V$, $V_{GE} = \pm 20V$			± 100 nA
$V_{CE(sat)}$	$I_C = 8A$, $V_{GE} = 15V$, Note 1 $T_J = 150^\circ C$		3.35 4.75	V V

Symbol Test Conditions

($T_J = 25^\circ\text{C}$ Unless Otherwise Specified)

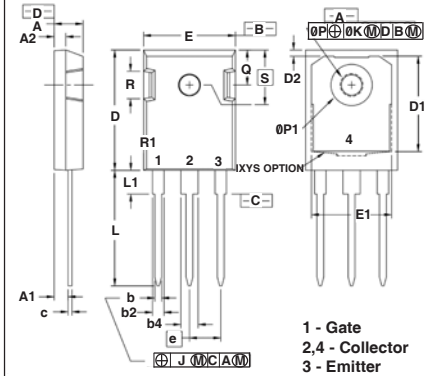
Characteristic Values

		Min.	Typ.	Max.
g_{fs}	$I_C = 8\text{A}, V_{CE} = 10\text{V}$, Note 1	5.4	9.0	S
R_{Gi}	Gate Input Resistance		10	Ω
C_{ies}	$V_{CE} = 25\text{V}, V_{GE} = 0\text{V}, f = 1\text{MHz}$		936	pF
C_{oes}			38	pF
C_{res}			15	pF
$Q_{g(on)}$	$I_C = 8\text{A}, V_{GE} = 15\text{V}, V_{CE} = 0.5 \cdot V_{CES}$		45	nC
Q_{ge}			6	nC
Q_{gc}			21	nC
$t_{d(on)}$	Inductive load, $T_J = 25^\circ\text{C}$ $I_C = 8\text{A}, V_{GE} = 15\text{V}$ $V_{CE} = 0.5 \cdot V_{CES}, R_G = 15\Omega$ Note 2		11	ns
t_{ri}			5	ns
E_{on}			2.60	mJ
$t_{d(off)}$			180	ns
t_{fi}			86	ns
E_{off}			1.07	mJ
$t_{d(on)}$	Inductive load, $T_J = 150^\circ\text{C}$ $I_C = 8\text{A}, V_{GE} = 15\text{V}$ $V_{CE} = 0.5 \cdot V_{CES}, R_G = 15\Omega$ Note 2		12	ns
t_{ri}			12	ns
E_{on}			3.70	mJ
$t_{d(off)}$			200	ns
t_{fi}			128	ns
E_{off}			1.20	mJ
R_{thJC}				0.53 $^\circ\text{C/W}$
R_{thCS}			0.21	$^\circ\text{C/W}$

Notes:

1. Pulse test, $t \leq 300\mu\text{s}$, duty cycle, $d \leq 2\%$.
2. Switching times & energy losses may increase for higher $V_{CE}(\text{clamp})$, T_J or R_G .

TO-247 (IXYH) Outline



SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	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
b2	.075	.087	1.91	2.20
b4	.115	.126	2.92	3.20
C	.024	.031	0.61	0.80
D	.819	.840	20.80	21.34
D1	.650	.690	16.51	17.53
D2	.035	.050	0.89	1.27
E	.620	.635	15.75	16.13
E1	.545	.565	13.84	14.35
e	.215 BSC		5.45 BSC	
J	--	.010	--	0.25
K	--	.025	--	0.64
L	.780	.810	19.81	20.57
L1	.150	.170	3.81	4.32
ØP	.140	.144	3.55	3.65
ØP1	.275	.290	6.99	7.37
Q	.220	.244	5.59	6.20
R	.170	.190	4.32	4.83
S	.242 BSC		6.15 BSC	

ADVANCE TECHNICAL INFORMATION

The product presented herein is under development. The Technical Specifications offered are derived from a subjective evaluation of the design, based upon prior knowledge and experience, and constitute a "considered reflection" of the anticipated result. IXYS reserves the right to change limits, test conditions, and dimensions without notice.

IXYS Reserves the Right to Change Limits, Test Conditions, and Dimensions.

IXYS MOSFETs and IGBTs are covered by one or more of the following U.S. patents:	4,835,592	4,931,844	5,049,961	5,237,481	6,162,665	6,404,065 B1	6,683,344	6,727,585	7,005,734 B2	7,157,338B2
	4,860,072	5,017,508	5,063,307	5,381,025	6,259,123 B1	6,534,343	6,710,405 B2	6,759,692	7,063,975 B2	
	4,881,106	5,034,796	5,187,117	5,486,715	6,306,728 B1	6,583,505	6,710,463	6,771,478 B2	7,071,537	

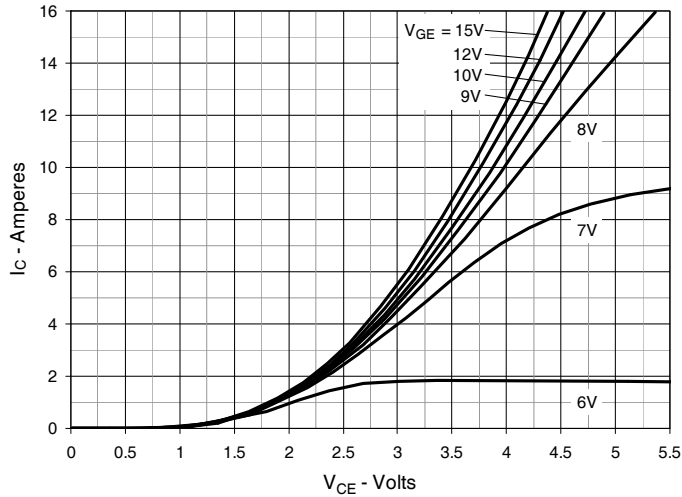
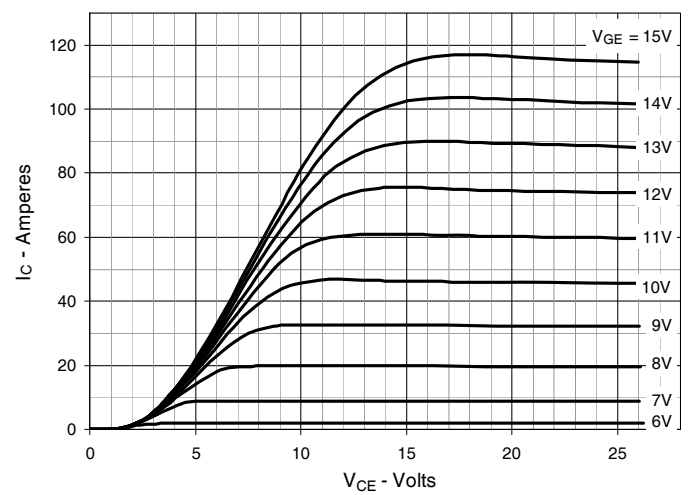
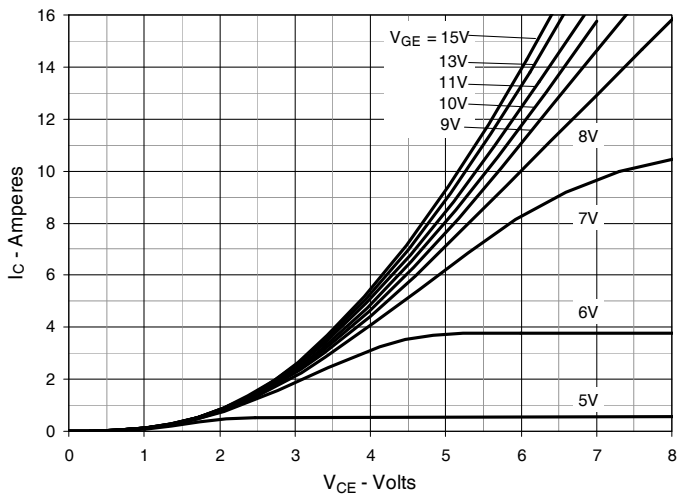
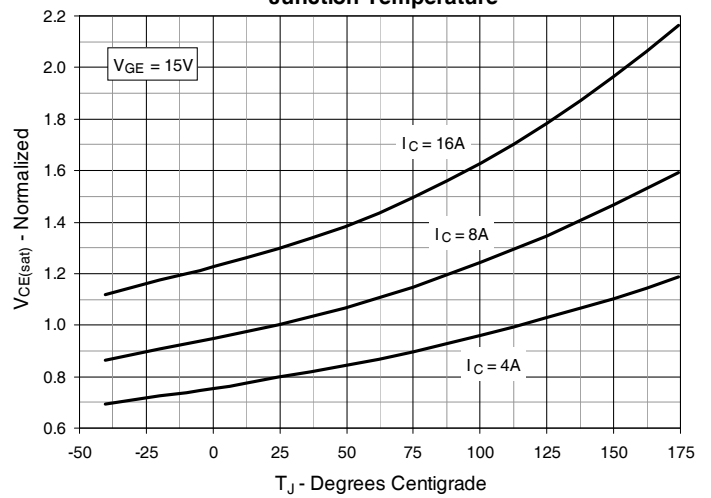
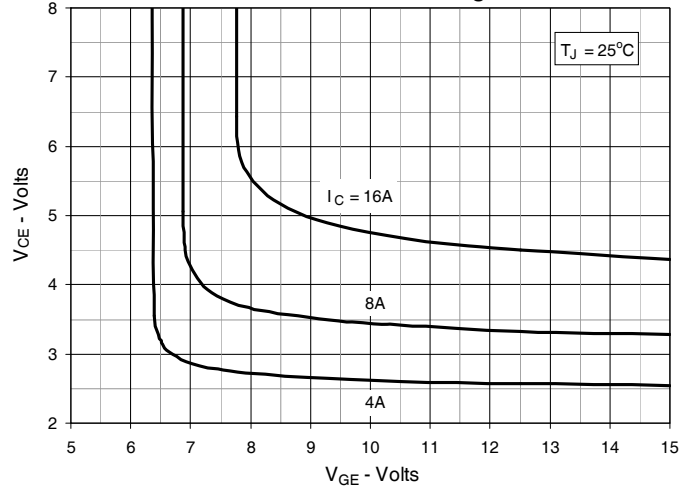
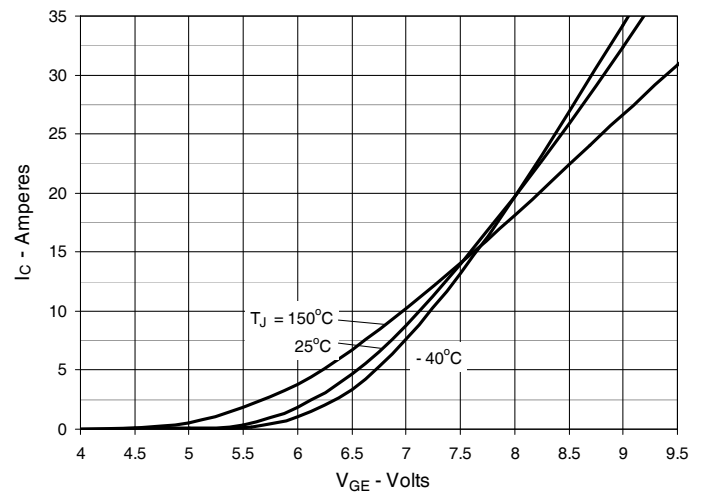
Fig. 1. Output Characteristics @ $T_J = 25^\circ\text{C}$

Fig. 2. Extended Output Characteristics @ $T_J = 25^\circ\text{C}$

Fig. 3. Output Characteristics @ $T_J = 150^\circ\text{C}$

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


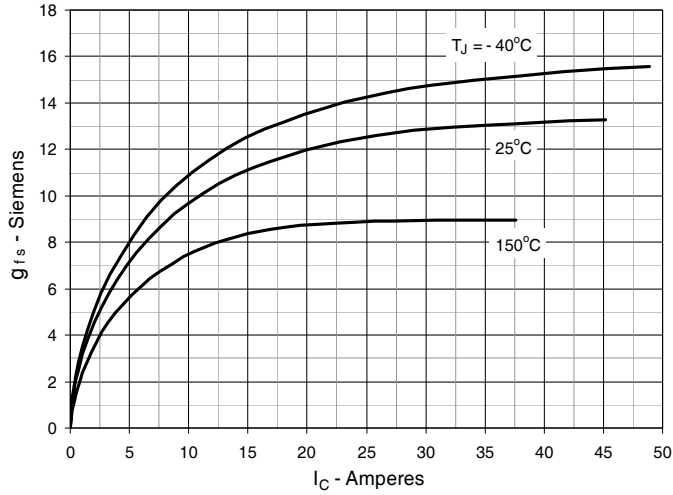
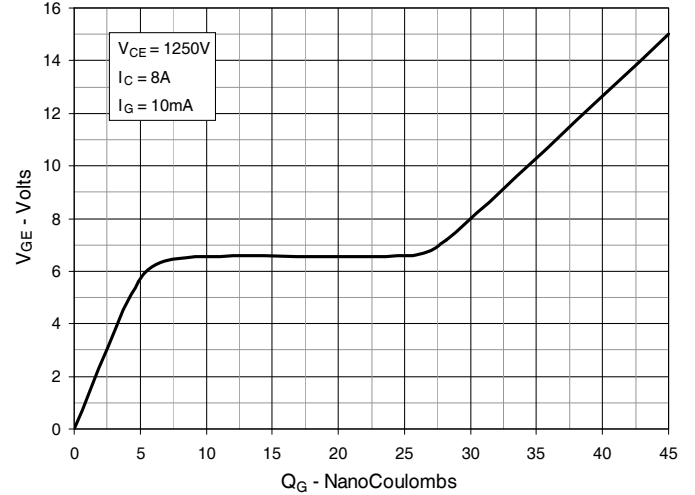
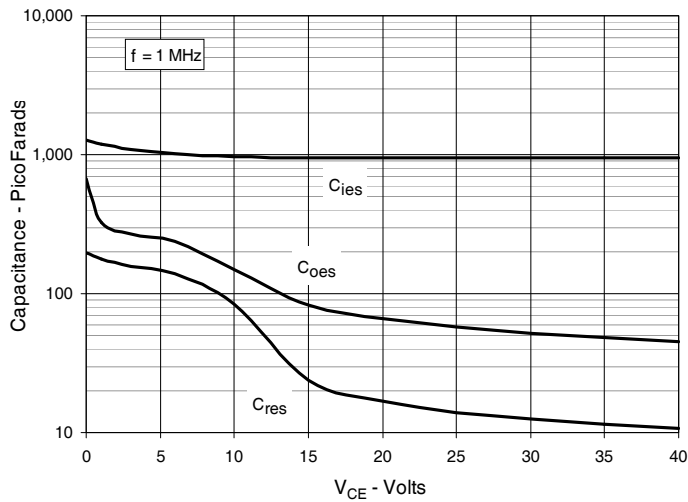
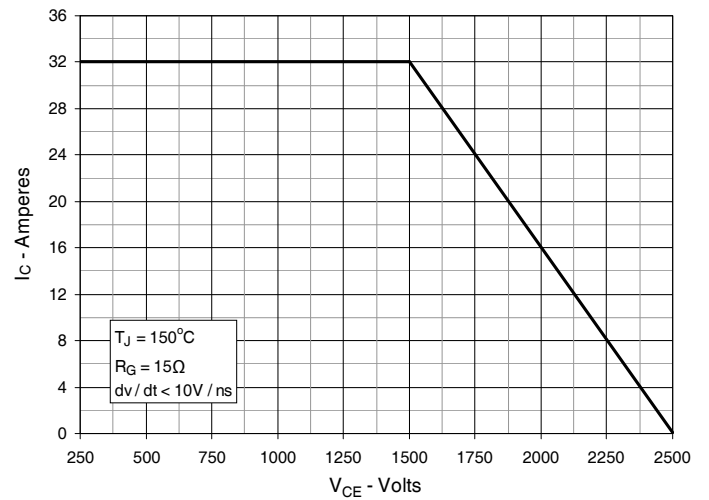
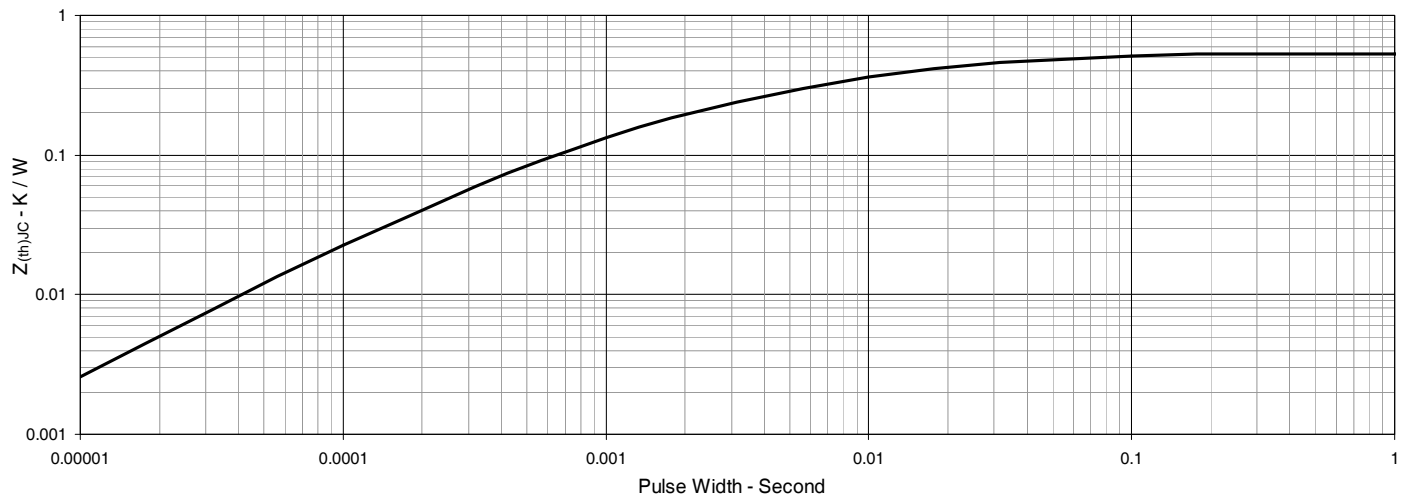
Fig. 7. Transconductance

Fig. 8. Gate Charge

Fig. 9. Capacitance

Fig. 10. Reverse-Bias Safe Operating Area

Fig. 11. Maximum Transient Thermal Impedance


Fig. 12. Inductive Switching Energy Loss vs. Gate Resistance

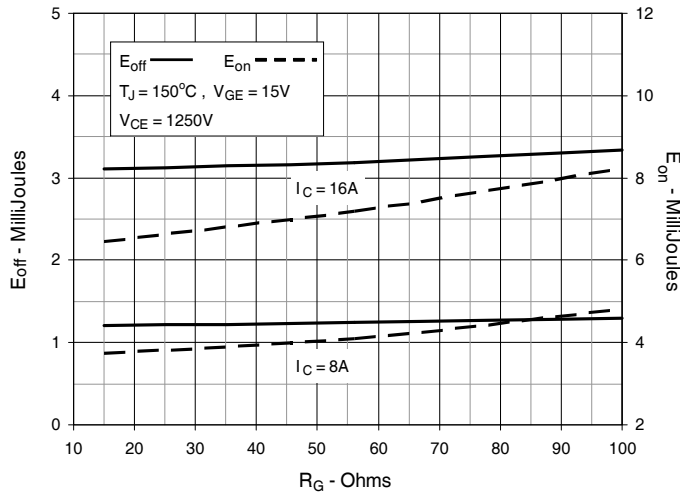


Fig. 13. Inductive Switching Energy Loss vs. Collector Current

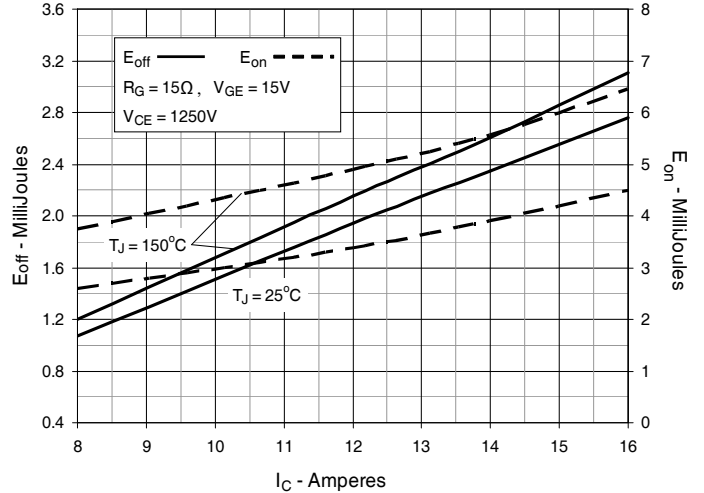


Fig. 14. Inductive Switching Energy Loss vs. Junction Temperature

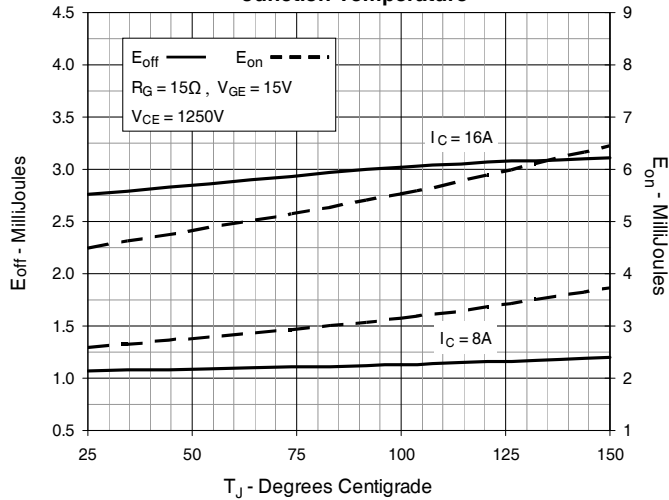


Fig. 15. Inductive Turn-off Switching Times vs. Gate Resistance

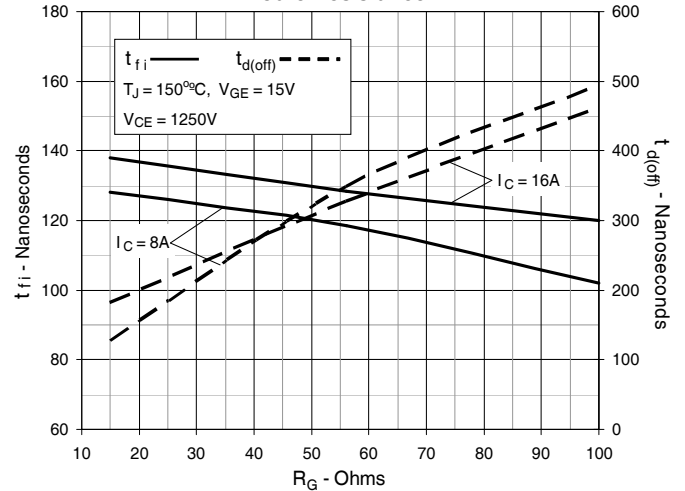


Fig. 16. Inductive Turn-off Switching Times vs. Collector Current

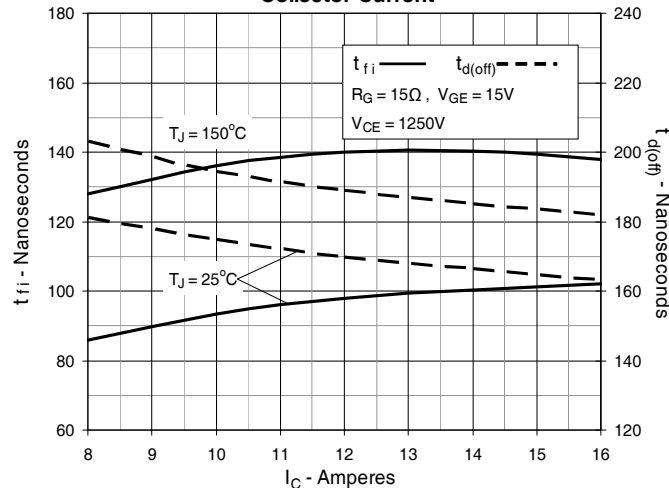


Fig. 17. Inductive Turn-off Switching Times vs. Junction Temperature

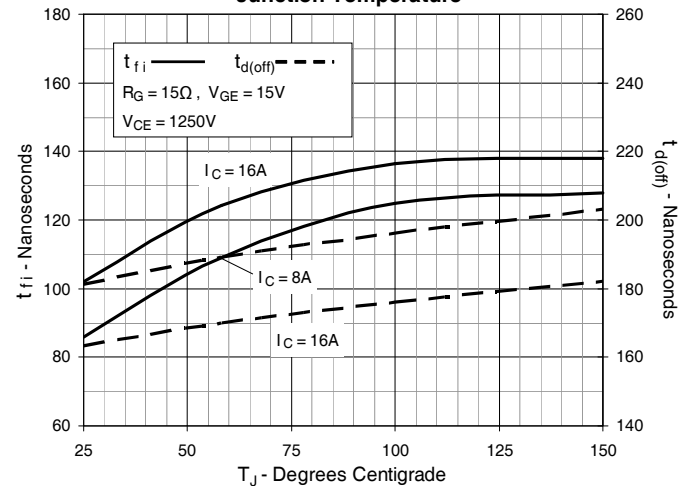


Fig. 18. Inductive Turn-on Switching Times vs. Gate Resistance

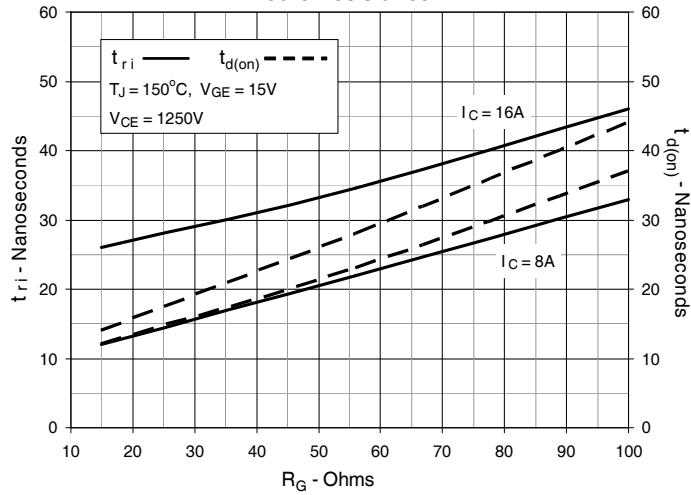


Fig. 19. Inductive Turn-on Switching Times vs. Collector Current

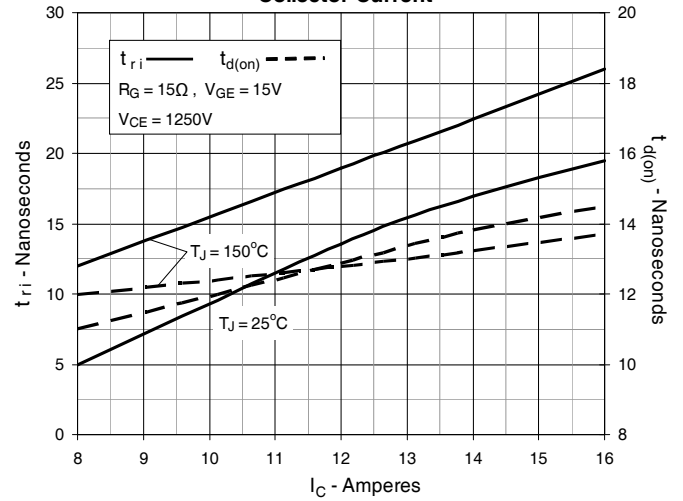


Fig. 20. Inductive Turn-on Switching Times vs. Junction Temperature

