

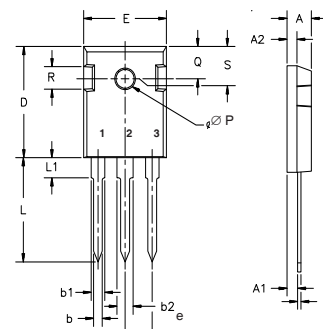
Symbol	Test Conditions	Characteristic Values		
		Min.	Typ.	Max.
g_{fs}	$I_C = 50A, V_{CE} = 10V, \text{Note 1}$	40	70	S
C_{ies}	$V_{CE} = 25V, V_{GE} = 0V, f = 1MHz$		4850	pF
C_{oes}			270	pF
C_{res}			66	pF
Q_g	$I_C = 50A, V_{GE} = 15V, V_{CE} = 0.5 \cdot V_{CES}$		167	nC
Q_{ge}			28	nC
Q_{gc}			60	nC
$t_{d(on)}$	Inductive load, $T_J = 25^\circ C$ $I_C = 50A, V_{GE} = 15V$ $V_{CE} = 480V, R_G = 3\Omega$		26	ns
t_{ri}			40	ns
E_{on}			1.42	mJ
$t_{d(off)}$			268	ns
t_{fi}			222	ns
E_{off}			3.28	mJ
$t_{d(on)}$	Inductive load, $T_J = 125^\circ C$ $I_C = 50A, V_{GE} = 15V$ $V_{CE} = 480V, R_G = 3\Omega$		25	ns
t_{ri}			40	ns
E_{on}			2.76	mJ
$t_{d(off)}$			415	ns
t_{fi}			362	ns
E_{off}			6.00	mJ
R_{thJC}			0.27	$^\circ C/W$
R_{thCS}			0.25	$^\circ C/W$

Note 1: Pulse test, $t \leq 300\mu s$, duty cycle, $d \leq 2\%$.

PRELIMINARY TECHNICAL INFORMATION

The product presented herein is under development. The Technical Specifications offered are derived from data gathered during objective characterizations of preliminary engineering lots; but also may yet contain some information supplied during a pre-production design evaluation. IXYS reserves the right to change limits, test conditions, and dimensions without notice.

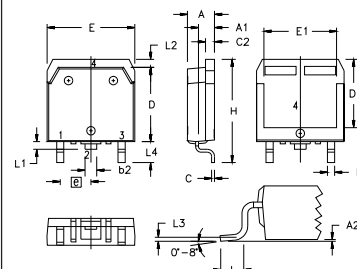
TO-247 (IXGH) Outline



Terminals: 1 - Gate
2 - Drain
3 - Source
Tab - Drain

Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.7	5.3	.185	.209
A ₁	2.2	2.54	.087	.102
A ₂	2.2	2.6	.059	.098
b	1.0	1.4	.040	.055
b ₁	1.65	2.13	.065	.084
b ₂	2.87	3.12	.113	.123
C	.4	.8	.016	.031
D	20.80	21.46	.819	.845
E	15.75	16.26	.610	.640
e	5.20	5.72	0.205	0.225
L	19.81	20.32	.780	.800
L ₁		4.50		.177
ØP	3.55	3.65	.140	.144
Q	5.89	6.40	0.232	0.252
R	4.32	5.49	.170	.216
S	6.15	BSC	242	BSC

TO-268 (IXGT) Outline



SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.193	.201	4.90	5.10
A ₁	.106	.114	2.70	2.90
A ₂	.001	.010	0.02	0.25
b	.045	.057	1.15	1.45
b ₂	.075	.083	1.90	2.10
C	.016	.026	0.40	0.65
C ₂	.057	.063	1.45	1.60
D	.543	.551	13.80	14.00
D ₁	.488	.500	12.40	12.70
E	.624	.632	15.85	16.05
E ₁	.524	.535	13.30	13.60
e	.215 BSC		5.45 BSC	
H	.736	.752	18.70	19.10
L	.094	.106	2.40	2.70
L ₁	.047	.055	1.20	1.40
L ₂	.039	.045	1.00	1.15
L ₃	.010 BSC		0.25 BSC	
L ₄	.150	.161	3.80	4.10

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

IXYS MOSFETs and IGBTs are covered 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
by one or more of the following U.S. patents: 4,850,072 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
@ 25°C

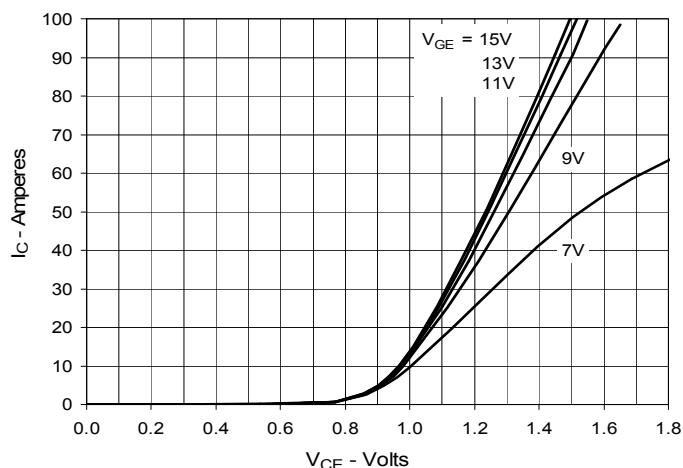


Fig. 2. Extended Output Characteristics
@ 25°C

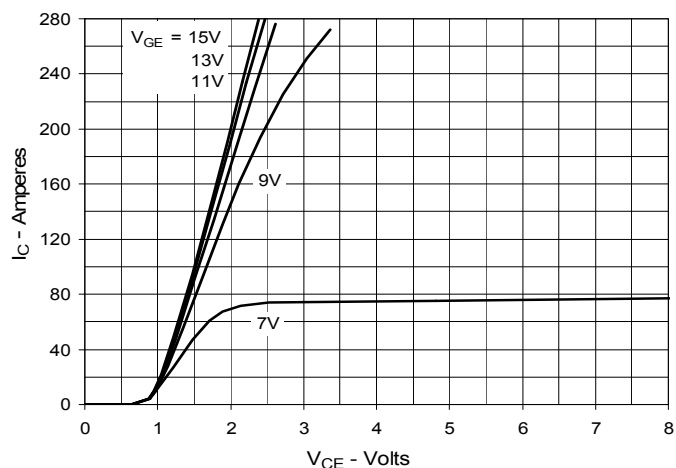


Fig. 3. Output Characteristics
@ 125°C

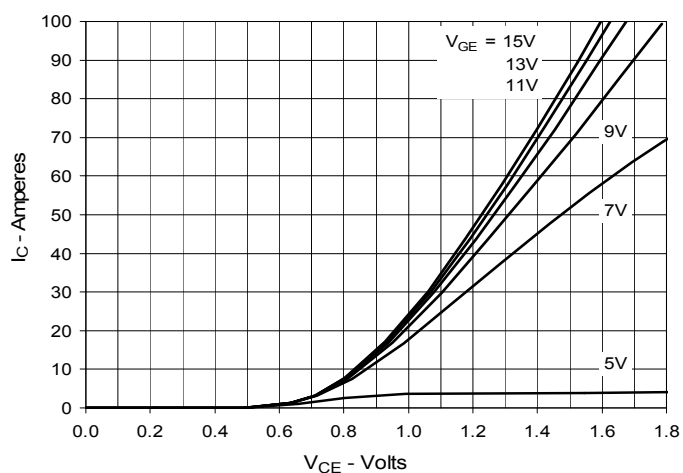


Fig. 4. Dependence of $V_{CE(sat)}$ on
Junction Temperature

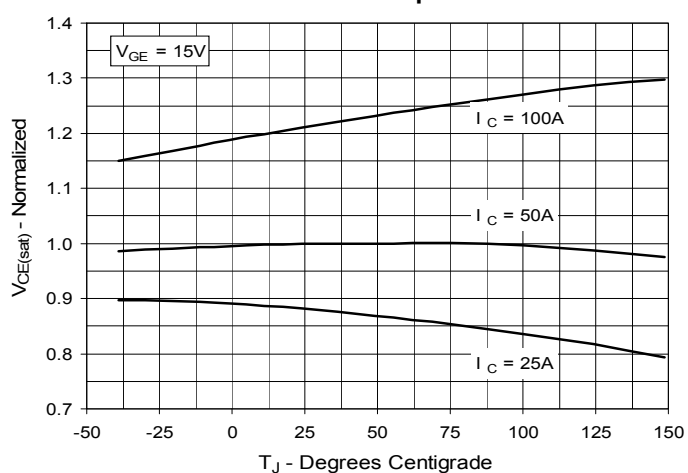


Fig. 5. Collector-to-Emitter Voltage
vs. Gate-to-Emitter Voltage

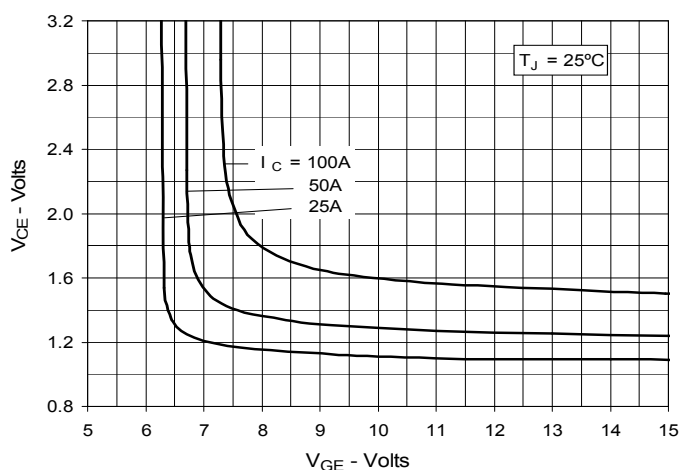


Fig. 6. Input Admittance

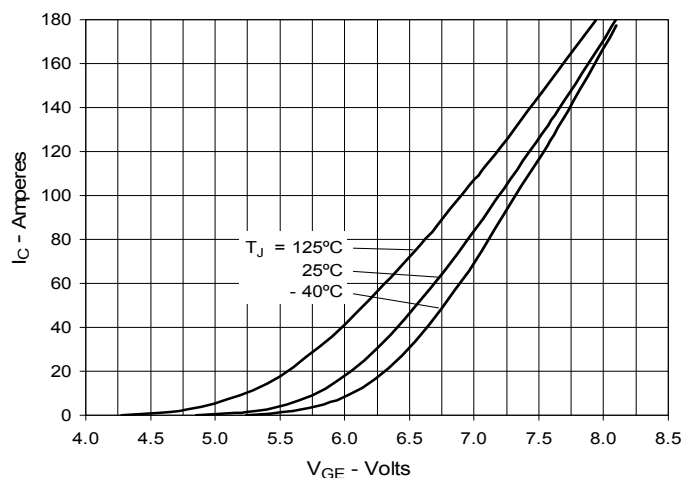


Fig. 7. Transconductance

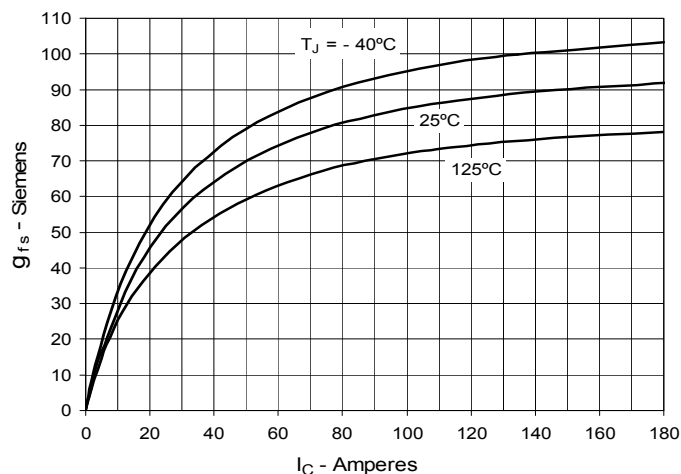


Fig. 8. Gate Charge

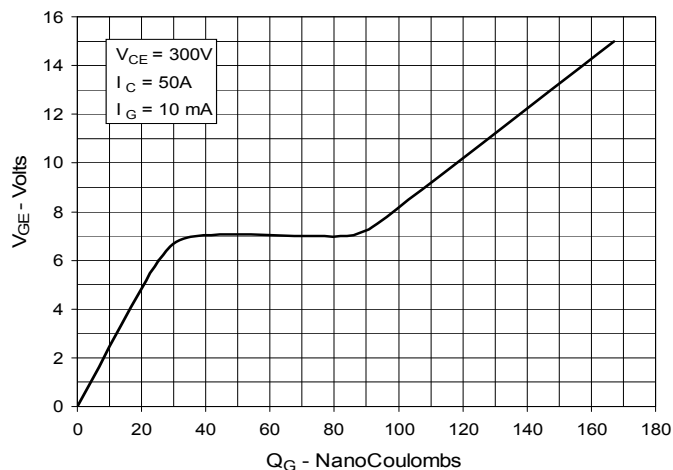


Fig. 9. Capacitance

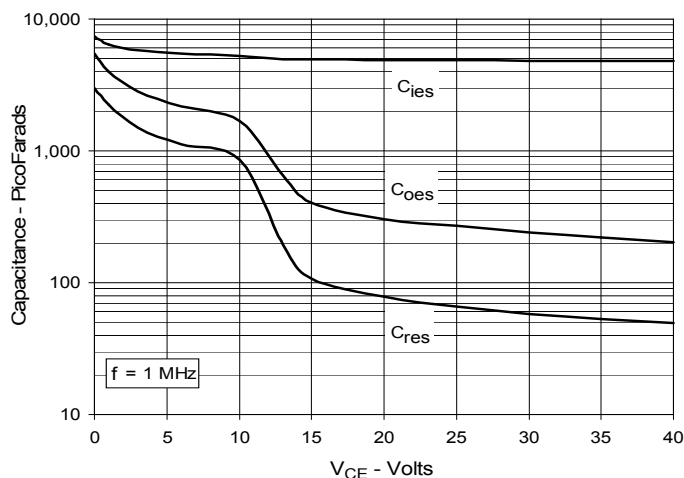


Fig. 10. Reverse-Bias Safe Operating Area

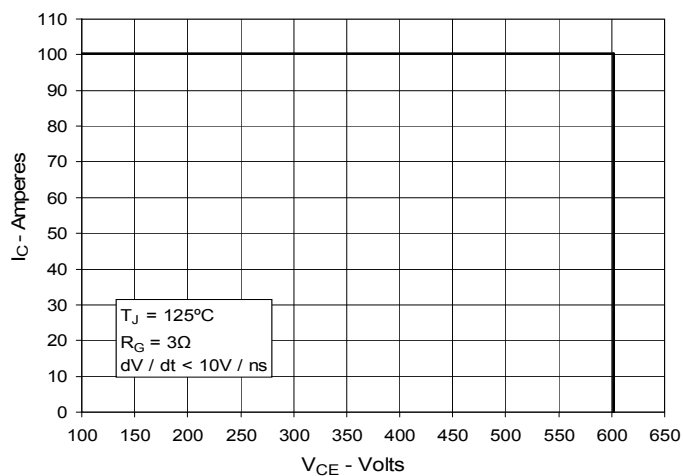
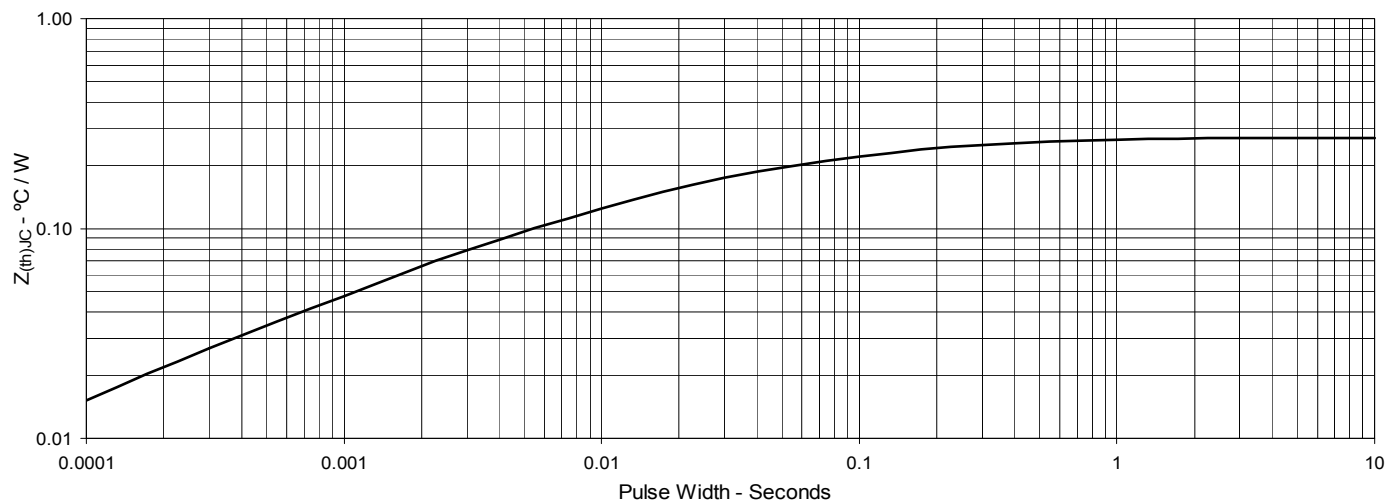
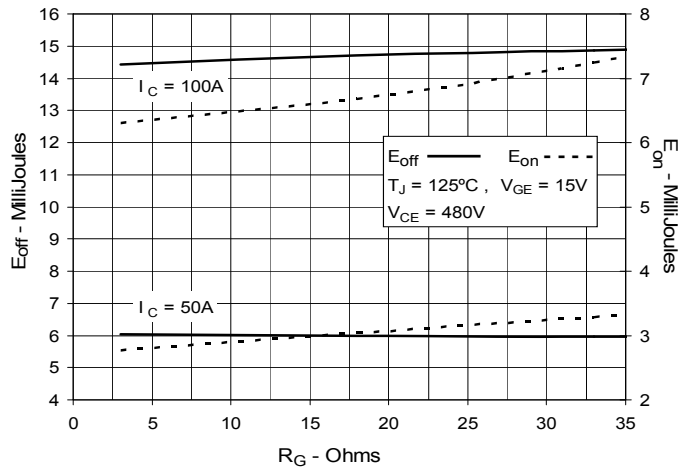


Fig. 11. Maximum Transient Thermal Impedance

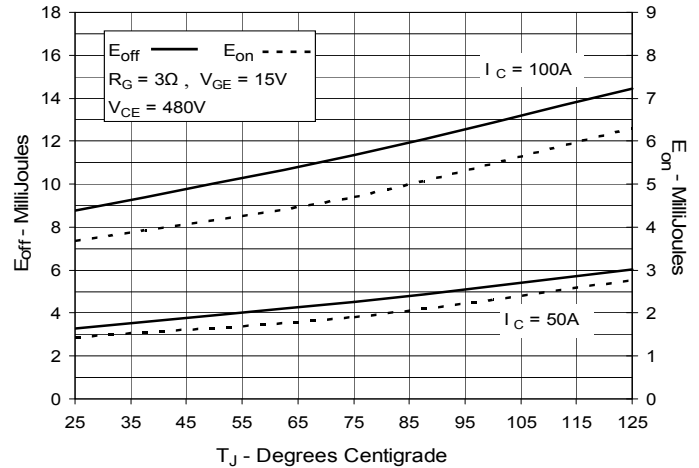


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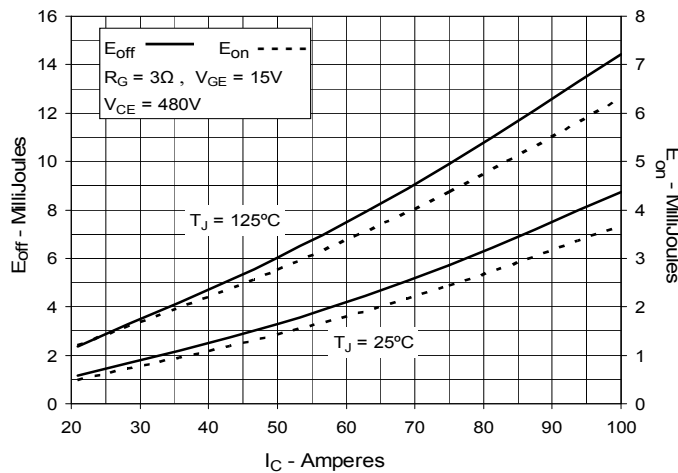
**Fig. 12. Inductive Switching
Energy Loss vs. Gate Resistance**



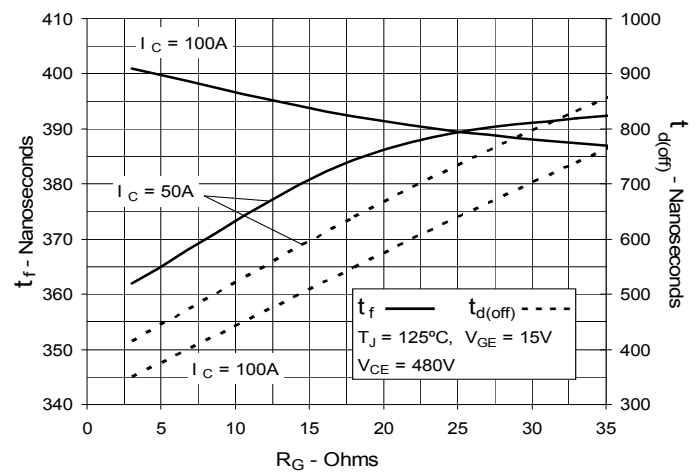
**Fig. 13. Inductive Switching
Energy Loss vs. Junction Temperature**



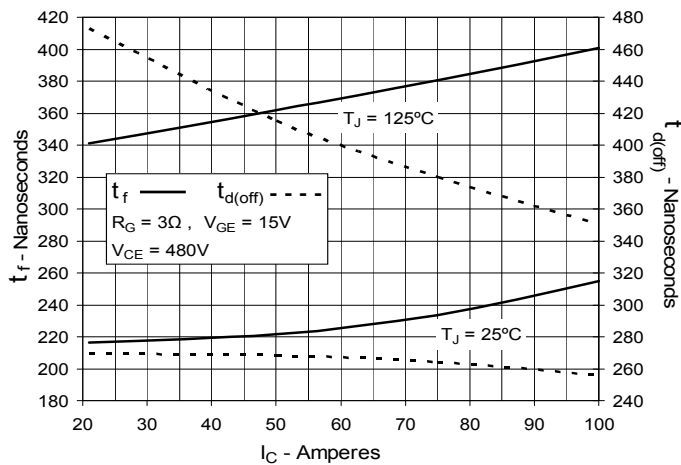
**Fig. 14. Inductive Switching
Energy Loss vs. Collector Current**



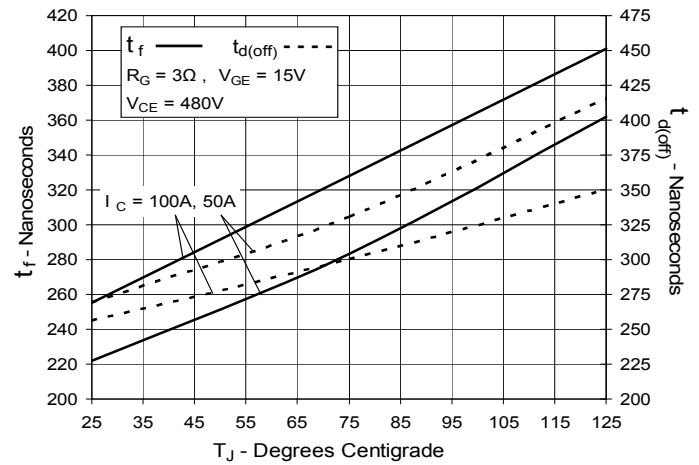
**Fig. 15. Inductive Turn-off
Switching Times vs. Gate Resistance**



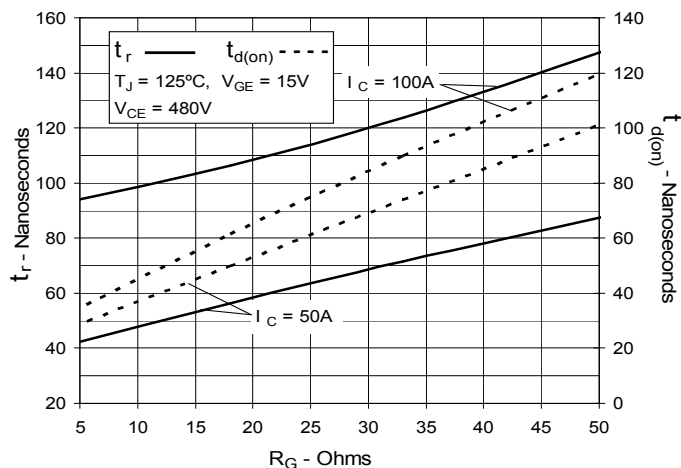
**Fig. 16. Inductive Turn-off
Switching Times vs. Collector Current**



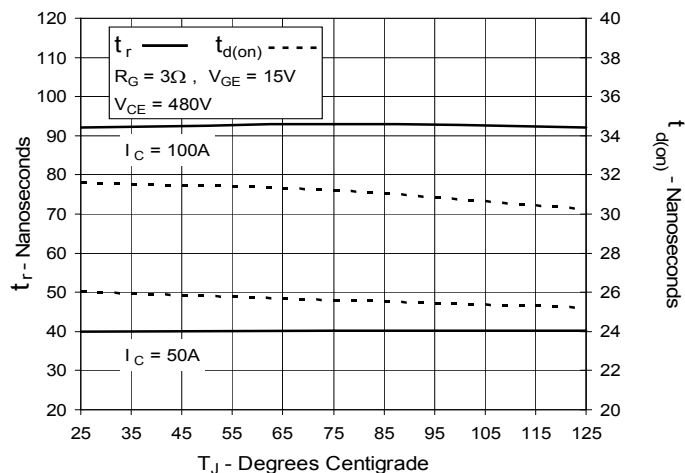
**Fig. 17. Inductive Turn-off
Switching Times vs. Junction Temperature**



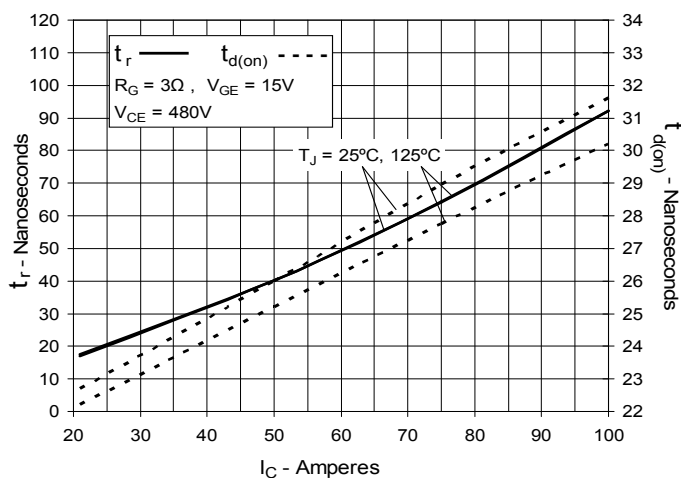
**Fig. 18. Inductive Turn-on
Switching Times vs. Gate Resistance**



**Fig. 19. Inductive Turn-on
Switching Times vs. Junction Temperature**



**Fig. 20. Inductive Turn-on
Switching Times vs. Collector Current**





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