

Symbol	Test Conditions	Characteristic Values		
		Min.	Typ.	Max.
(T _J = 25°C unless otherwise specified)				
g_{fs}	V _{DS} = 10 V; I _D = 60 A, Note 1	65	102	S
C_{iss}	V _{GS} = 0 V, V _{DS} = 25 V, f = 1 MHz	6600		pF
C_{oss}		880		pF
C_{rss}		135		pF
t_{d(on)}	Resistive Switching Times	33		ns
t_r	V _{GS} = 10 V, V _{DS} = 0.5 V _{DSS} , I _D = 25 A	61		ns
t_{d(off)}	R _G = 5 Ω (External)	49		ns
t_f		42		ns
Q_{g(on)}	V _{GS} = 10 V, V _{DS} = 0.5 V _{DSS} , I _D = 25 A	132		nC
Q_{gs}		37		nC
Q_{gd}		40		nC
R_{thJC}				0.35°C/W
R_{thCH}		0.25		°C/W

Source-Drain Diode

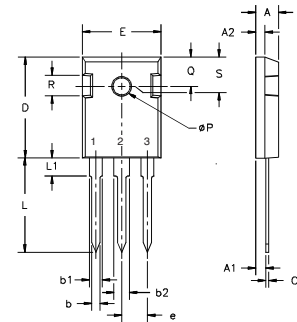
Symbol	Test Conditions	Characteristic Values		
		T _J = 25°C unless otherwise specified)		
		Min.	Typ.	Max.
I _S	V _{GS} = 0 V			160 A
I _{SM}	Pulse width limited by T _{JM}			430 A
V _{SD}	I _F = 25 A, V _{GS} = 0 V, Note 1			1.0 V
t _{rr}	I _F = 25 A, -di/dt = 100 A/μs V _R = 50 V, V _{GS} = 0 V		100	ns

- Notes: 1. Pulse test, t ≤ 300 μs, duty cycle d ≤ 2 %;
2. On through-hole packages, R_{DS(on)} Kelvin test contact location must be 5 mm or less from the package body.

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.

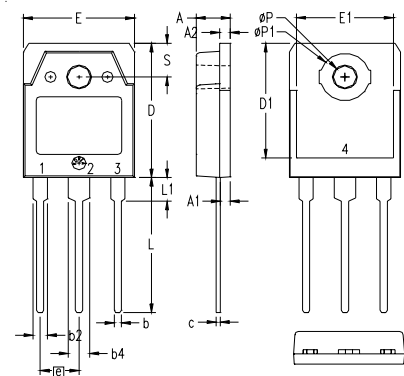
TO-247 AD Outline



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
L1		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-3P (IXTQ) Outline



Pins: 1 - Gate 2 - Drain
3 - Source 4, TAB - Drain

SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.185	.193	4.70	4.90
A1	.051	.059	1.30	1.50
A2	.057	.065	1.45	1.65
b	.035	.045	0.90	1.15
b2	.075	.087	1.90	2.20
b4	.114	.126	2.90	3.20
c	.022	.031	0.55	0.80
D	.780	.791	19.80	20.10
D1	.665	.677	16.90	17.20
E	.610	.622	15.50	15.80
E1	.531	.539	13.50	13.70
e	.215 BSC		5.45 BSC	
L	.779	.795	19.80	20.20
L1	.134	.142	3.40	3.60
ØP	.126	.134	3.20	3.40
ØP1	.272	.280	6.90	7.10
S	.193	.201	4.90	5.10

All metal area are tin plated.

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
	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

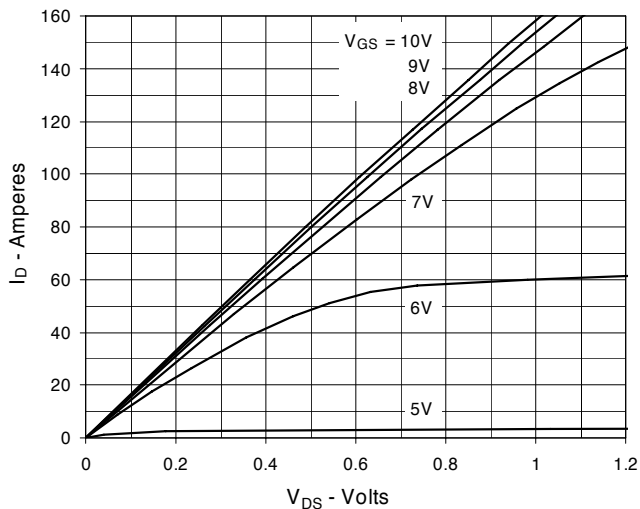
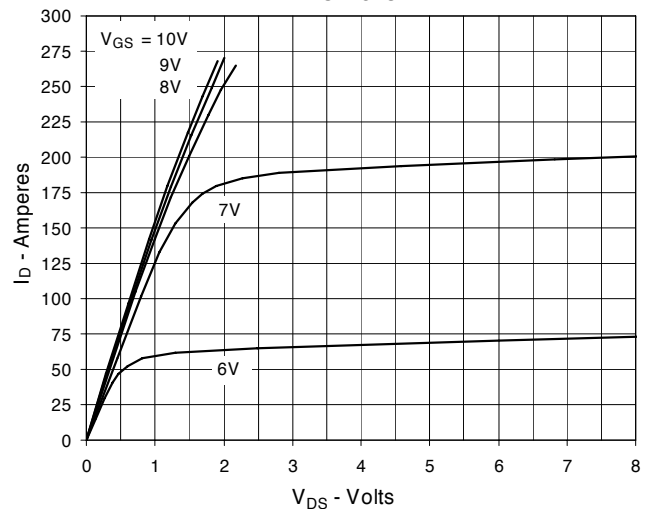
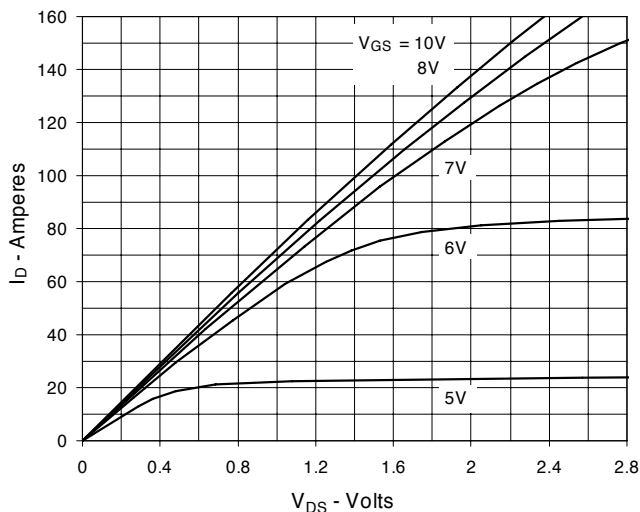
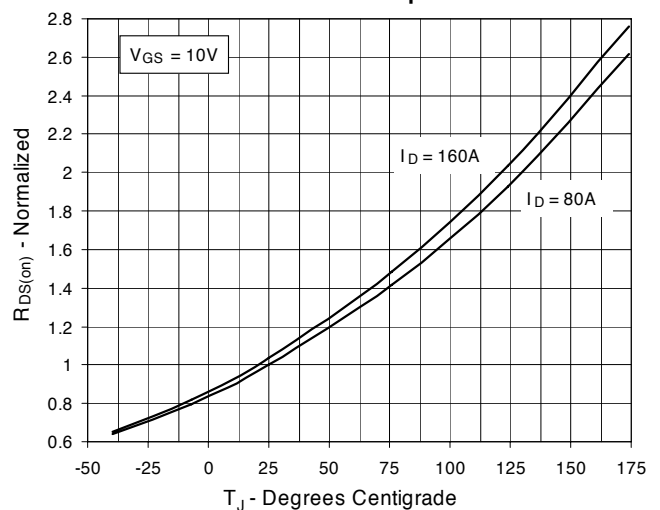
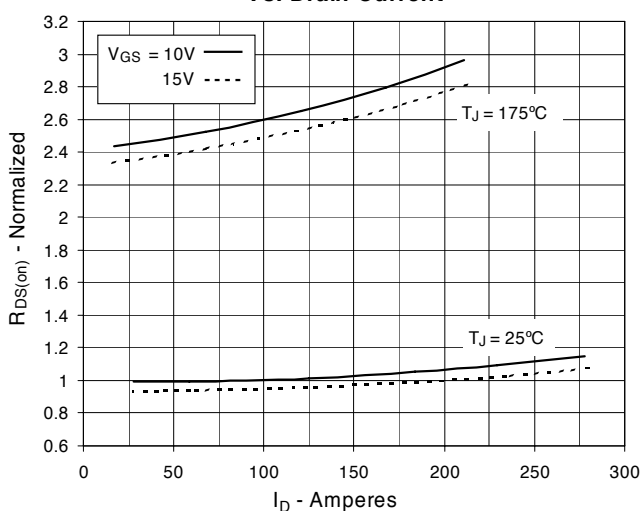
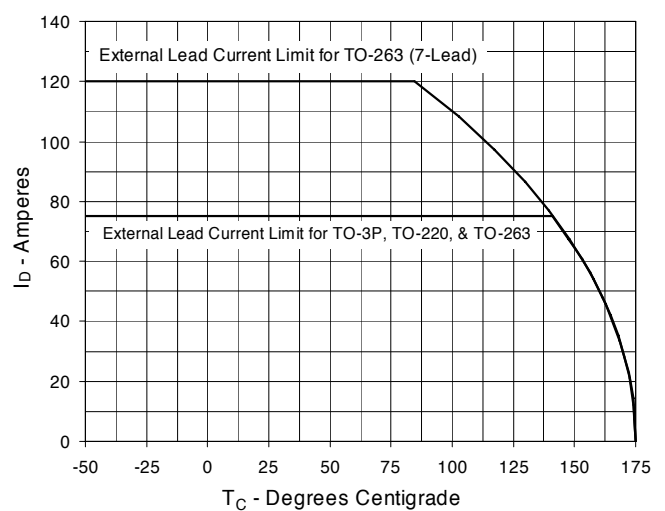
Fig. 1. Output Characteristics
@ 25°C

Fig. 2. Extended Output Characteristics
@ 25°C

Fig. 3. Output Characteristics
@ 150°C

Fig. 4. $R_{DS(on)}$ Normalized to $I_D = 160A$ Value
vs. Junction Temperature

Fig. 5. $R_{DS(on)}$ Normalized to $I_D = 80A$ Value
vs. Drain Current

Fig. 6. Drain Current vs. Case Temperature


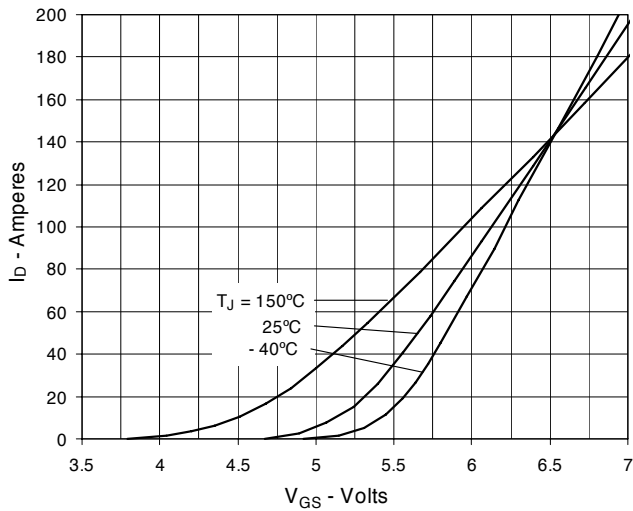
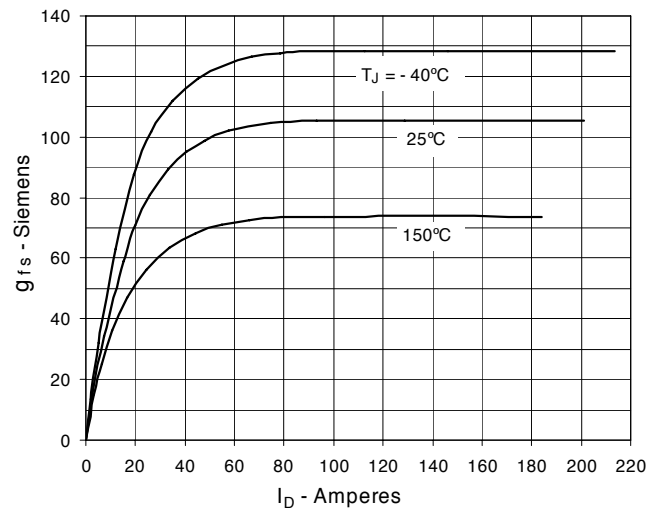
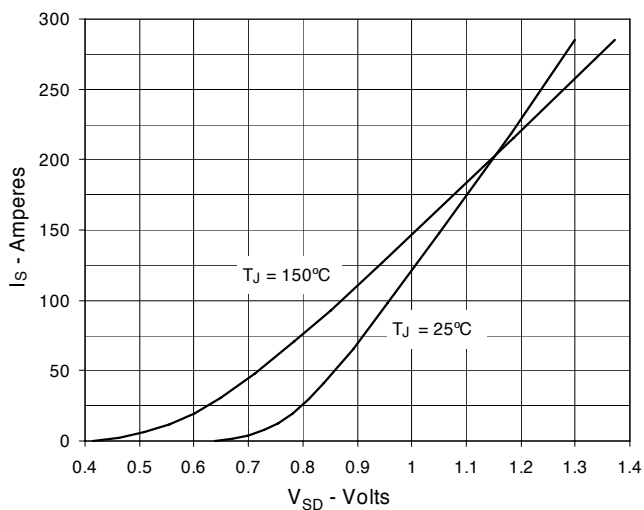
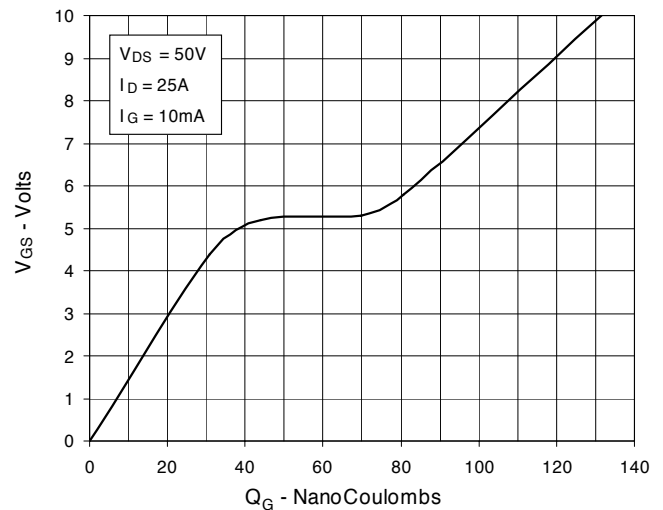
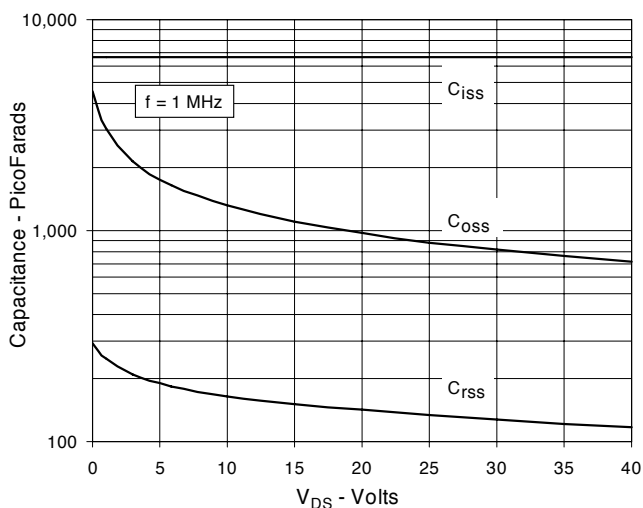
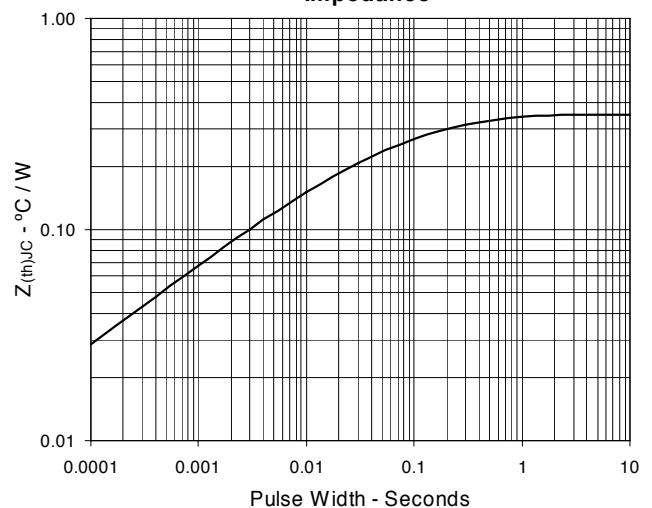
Fig. 7. Input Admittance

Fig. 8. Transconductance

Fig. 9. Forward Voltage Drop of Intrinsic Diode

Fig. 10. Gate Charge

Fig. 11. Capacitance

Fig. 12. Maximum Transient Thermal Impedance


Fig. 13. Resistive Turn-on
Rise Time vs. Junction Temperature

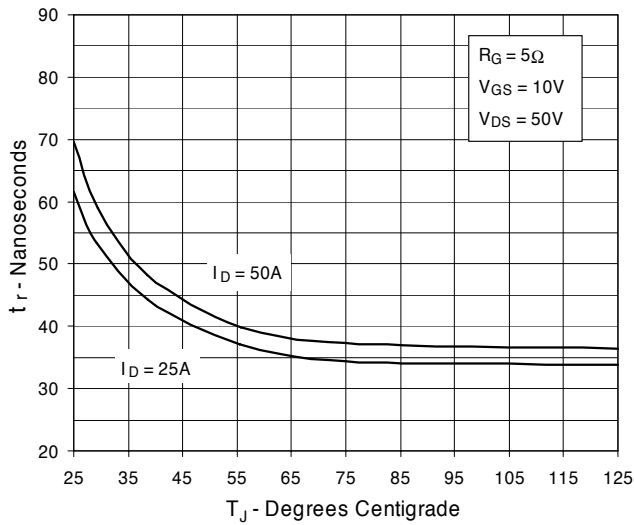


Fig. 14. Resistive Turn-on
Rise Time vs. Drain Current

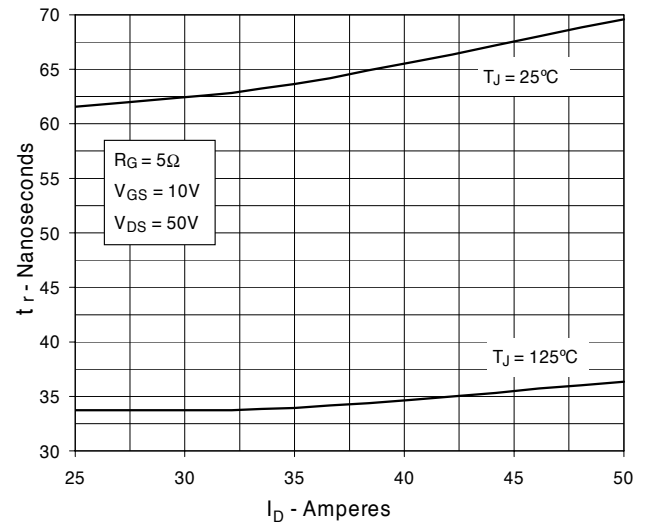


Fig. 15. Resistive Turn-on
Switching Times vs. Gate Resistance

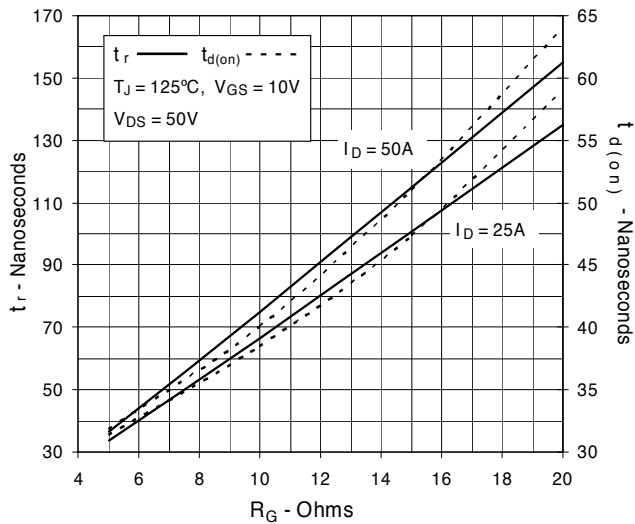


Fig. 16. Resistive Turn-off
Switching Times vs. Junction Temperature

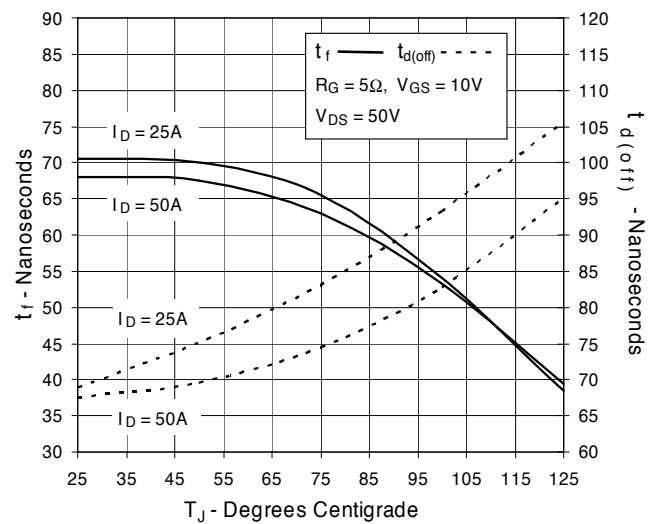


Fig. 17. Resistive Turn-off
Switching Times vs. Drain Current

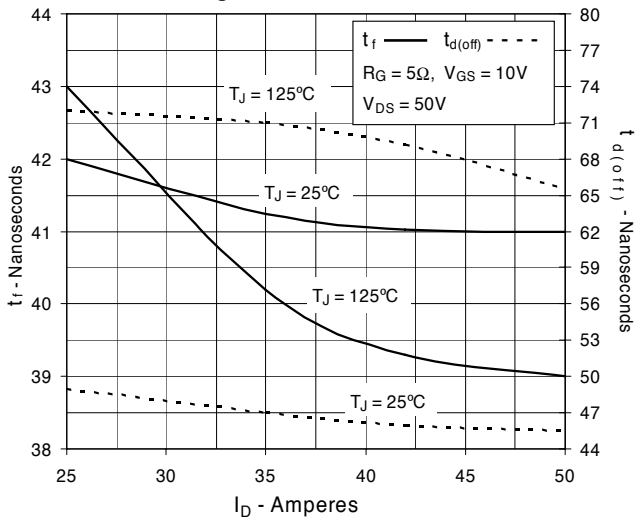
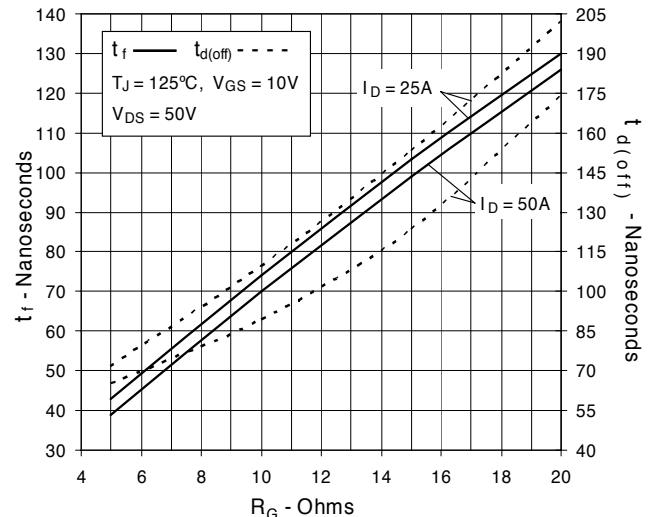


Fig. 18. Resistive Turn-off
Switching Times vs. Gate Resistance





Disclaimer Notice - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.