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[IXTP260N055T2](#)

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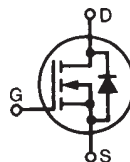
sales@integrated-circuit.com



TrenchT2™ Power MOSFET

IXTA260N055T2
IXTP260N055T2

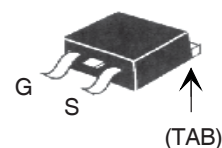
N-Channel Enhancement Mode
Avalanche Rated



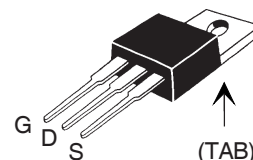
$$\begin{aligned} V_{DSS} &= 55V \\ I_{D25} &= 260A \\ R_{DS(on)} &\leq 3.3m\Omega \end{aligned}$$

Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C to } 175^\circ\text{C}$	55	V
V_{DGR}	$T_J = 25^\circ\text{C to } 175^\circ\text{C}, R_{GS} = 1M\Omega$	55	V
V_{GSM}	Transient	± 20	V
I_{D25}	$T_C = 25^\circ\text{C}$	260	A
I_{LRMS}	Lead Current Limit, RMS	120	A
I_{DM}	$T_C = 25^\circ\text{C}$, Pulse Width Limited by T_{JM}	780	A
I_A	$T_C = 25^\circ\text{C}$	100	A
E_{AS}	$T_C = 25^\circ\text{C}$	600	mJ
P_D	$T_C = 25^\circ\text{C}$	480	W
T_J		-55 ... +175	$^\circ\text{C}$
T_{JM}		175	$^\circ\text{C}$
T_{stg}		-55 ... +175	$^\circ\text{C}$
T_L	1.6mm (0.062in.) from Case for 10s	300	$^\circ\text{C}$
T_{sold}	Plastic Body for 10 Seconds	260	$^\circ\text{C}$
M_d	Mounting Torque (TO-220)	1.13 / 10	Nm/lb.in.
Weight	TO-263	2.5	g
	TO-220	3.0	g

TO-263 (IXTA)



TO-220 (IXTP)



G = Gate D = Drain
S = Source TAB = Drain

Features

- International Standard Packages
- 175 $^\circ\text{C}$ Operating Temperature
- High Current Handling Capability
- Avalanche Rated
- Low $R_{DS(on)}$

Advantages

- Easy to Mount
- Space Savings
- High Power Density

Applications

- Automotive Engine Drive
- Synchronous Buck Converter
- DC and DC Converters
- High Current Switching Applications
- Power Train Management
- Distributed Power Architecture

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$ unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{DSS}	$V_{GS} = 0V, I_D = 250\mu A$	55		V
$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2.0		4.0 V
I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 200 nA
I_{DSS}	$V_{DS} = V_{DSS}$			5 μA
	$V_{GS} = 0V$ $T_J = 150^\circ\text{C}$			150 μA
$R_{DS(on)}$	$V_{GS} = 10V, I_D = 50A$, Notes 1, 2			3.3 m Ω



IXTA260N055T2 IXTP260N055T2

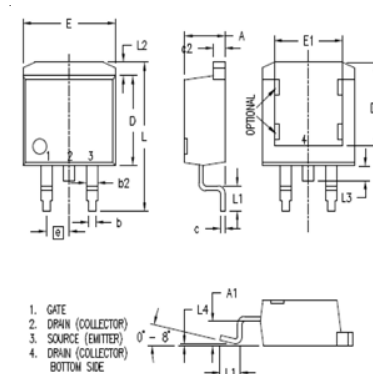
Symbol	Test Conditions (T _J = 25°C, Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
g_{fs}	V _{DS} = 10V, I _D = 60A, Note 1	55	94	S
C_{iss}	V _{GS} = 0V, V _{DS} = 25V, f = 1MHz		10.8	nF
C_{oss}			1460	pF
C_{rss}			215	pF
t_{d(on)}	Resistive Switching Times V _{GS} = 10V, V _{DS} = 0.5 • V _{DSS} , I _D = 100A R _G = 2Ω (External)		20	ns
t_r			27	ns
t_{d(off)}			36	ns
t_f			24	ns
Q_{g(on)}	V _{GS} = 10V, V _{DS} = 0.5 • V _{DSS} , I _D = 0.5 • I _{D25}		140	nC
Q_{gs}			52	nC
Q_{gd}			32	nC
R_{thJC}	TO-220			0.31 °C/W
R_{thCH}		0.50		°C/W

Source-Drain Diode

Symbol	Test Conditions (T _J = 25°C, Unless Otherwise Specified)	Characteristic Values		
		Min.	Typ.	Max.
I_S	V _{GS} = 0V			260 A
I_{SM}	Repetitive, Pulse Width Limited by T _{JM}			1000 A
V_{SD}	I _F = 100A, V _{GS} = 0V, Note 1			1.3 V
t_{rr}	I _F = 130A, V _{GS} = 0V -di/dt = 100A/μs V _R = 27V		60	ns
I_{RM}			3.4	A
Q_{RM}			102	nC

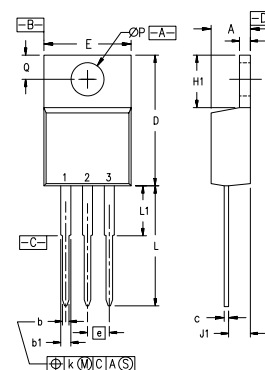
Notes: 1. Pulse Test, t ≤ 300μs; Duty Cycle, d ≤ 2%.
2. On Through-Hole Packages, R_{DS(on)} Kelvin Test Contact Location must be 5mm or Less from the Package Body.

TO-263 (IXTA) Outline

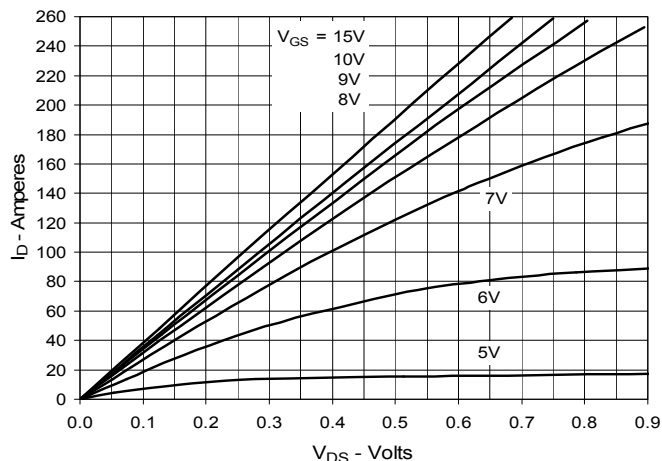


SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.160	.190	4.06	4.83
A1	.080	.110	2.03	2.79
b	.020	.039	0.51	0.99
b2	.045	.055	1.14	1.40
c	.016	.029	0.40	0.74
c2	.045	.055	1.14	1.40
D	.340	.380	8.64	9.65
D1	.315	.350	8.00	8.89
E	.390	.410	9.65	10.41
E1	.245	.320	6.22	8.13
e	.100 BSC		2.54 BSC	
L	.575	.625	14.61	15.88
L1	.090	.110	2.29	2.79
L2	.040	.055	1.02	1.40
L3	.050	.070	1.27	1.78
L4	0	.005	0	0.13

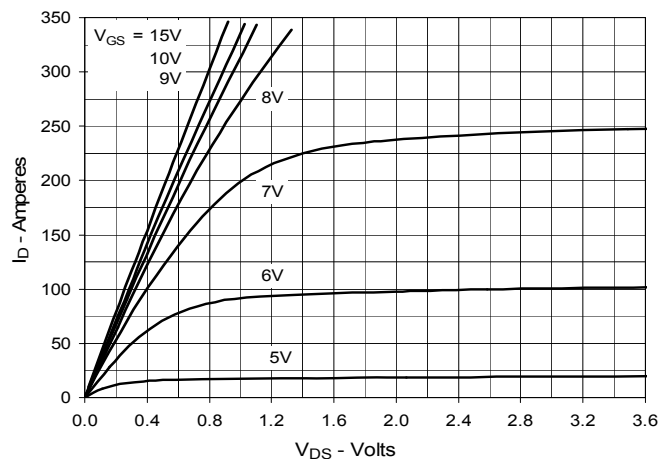
TO-220 (IXTP) Outline



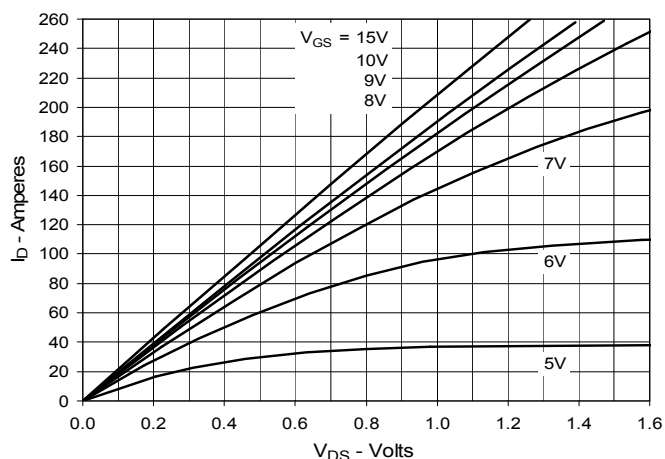
**Fig. 1. Output Characteristics
@ 25°C**



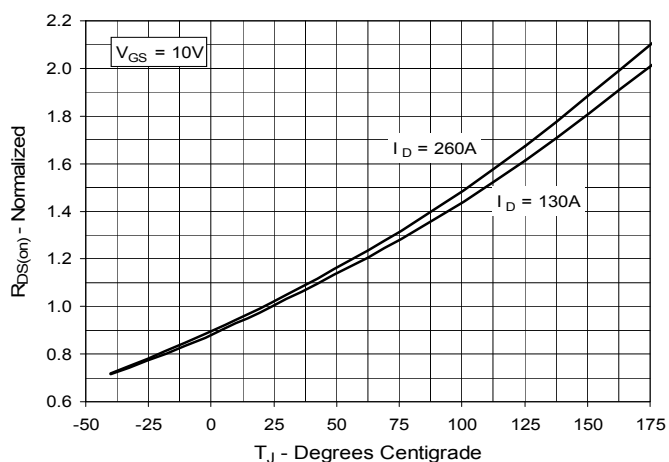
**Fig. 2. Extended Output Characteristics
@ 25°C**



**Fig. 3. Output Characteristics
@ 150°C**



**Fig. 4. $R_{DS(on)}$ Normalized to $I_D = 130A$ Value
vs. Junction Temperature**



**Fig. 5. $R_{DS(on)}$ Normalized to $I_D = 130A$ Value
vs. Drain Current**

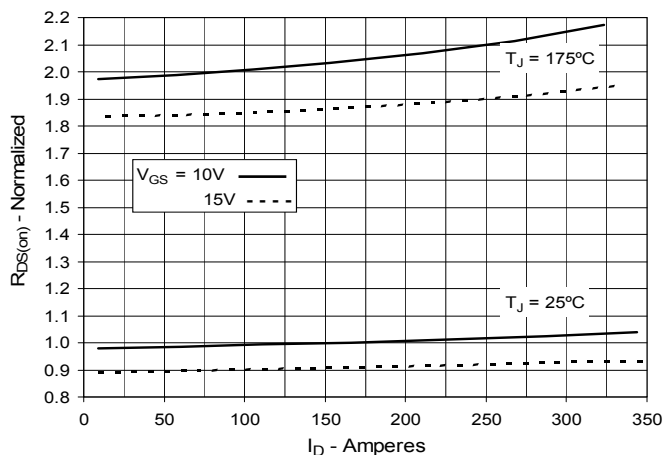


Fig. 6. Drain Current vs. Case Temperature

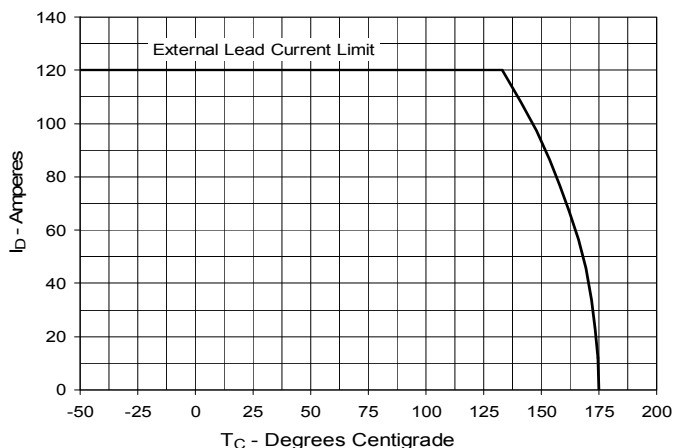


Fig. 7. Input Admittance

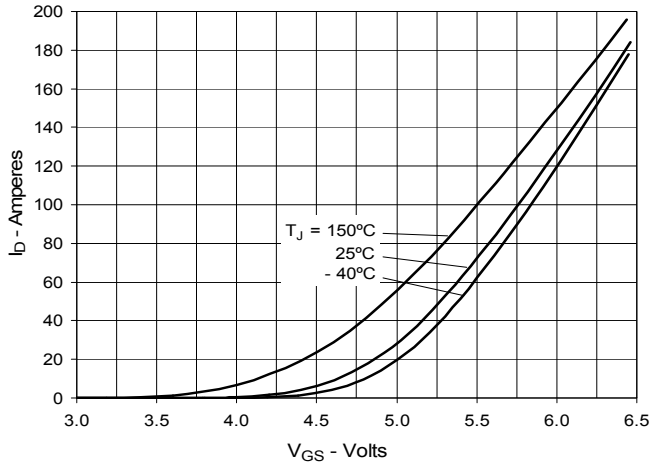


Fig. 8. Transconductance

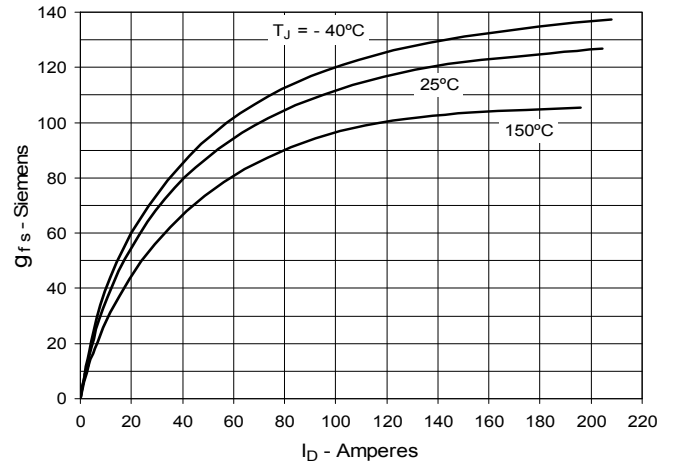


Fig. 9. Forward Voltage Drop of Intrinsic Diode

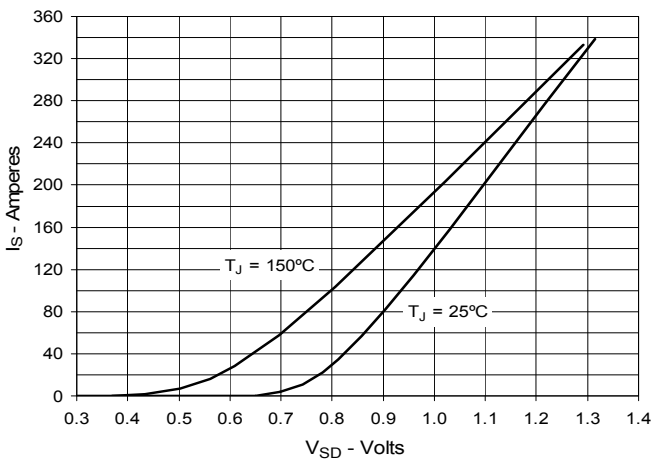


Fig. 10. Gate Charge

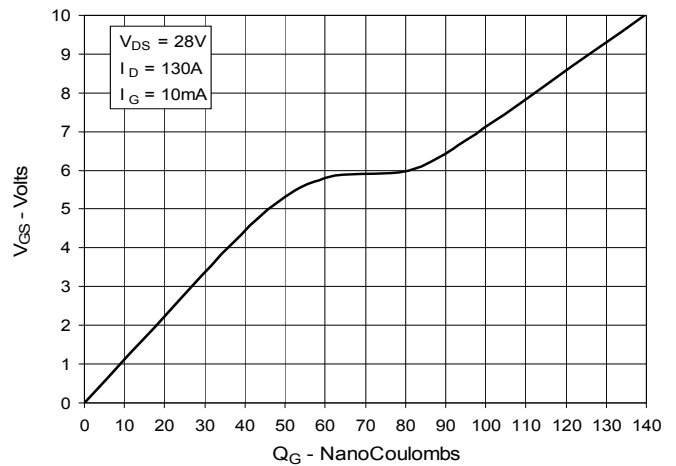


Fig. 11. Capacitance

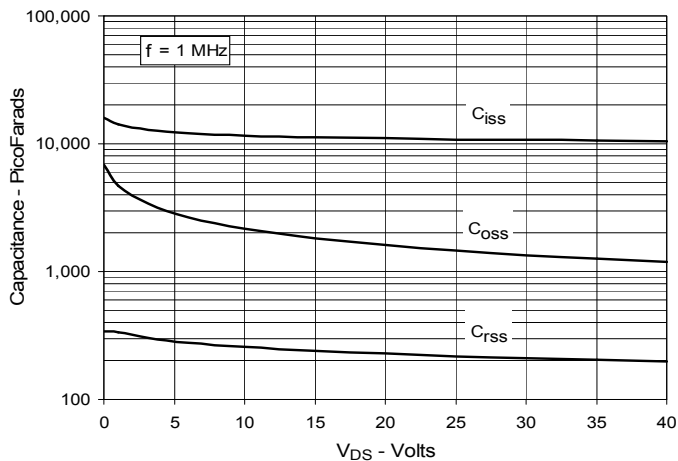
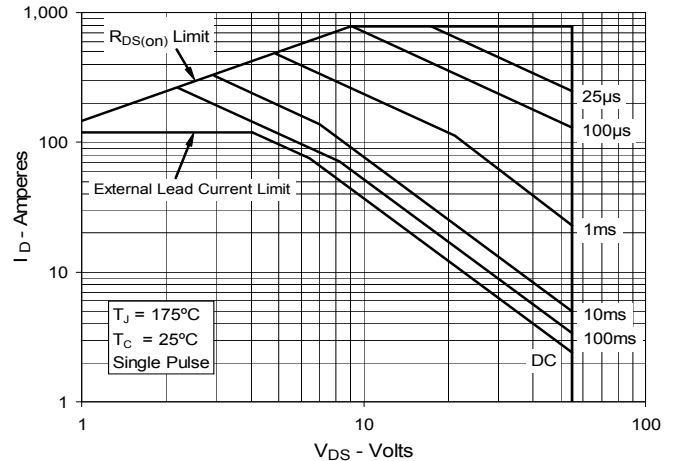
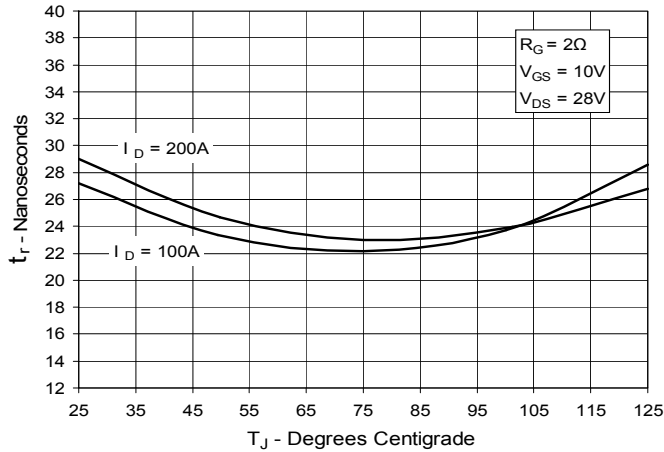


Fig. 12. Forward-Bias Safe Operating Area

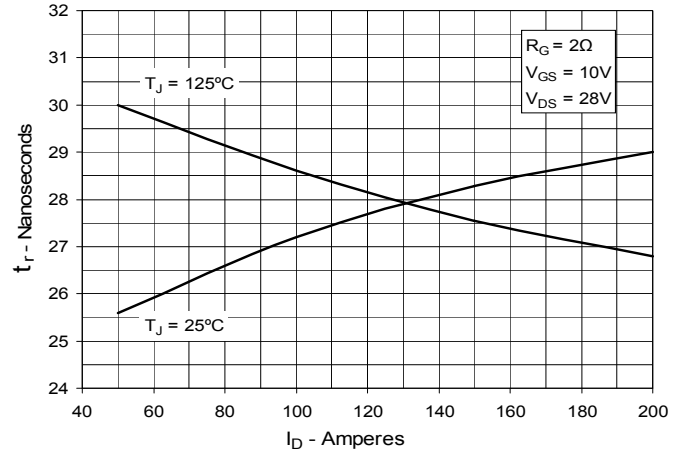


IXYS Reserves the Right to Change Limits, Test Conditions, and Dimensions.

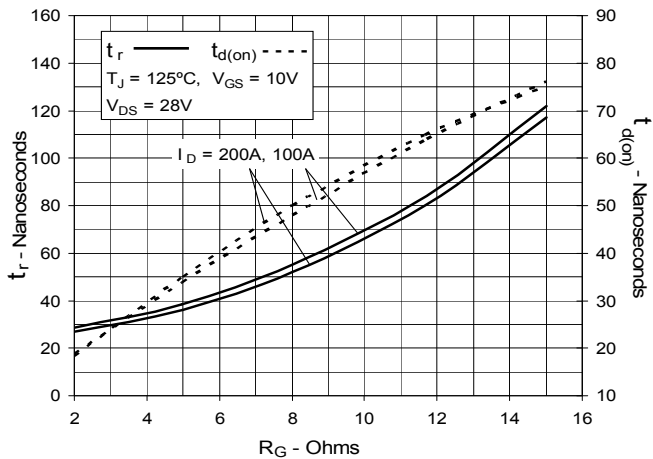
**Fig. 13. Resistive Turn-on
Rise Time vs. Junction Temperature**



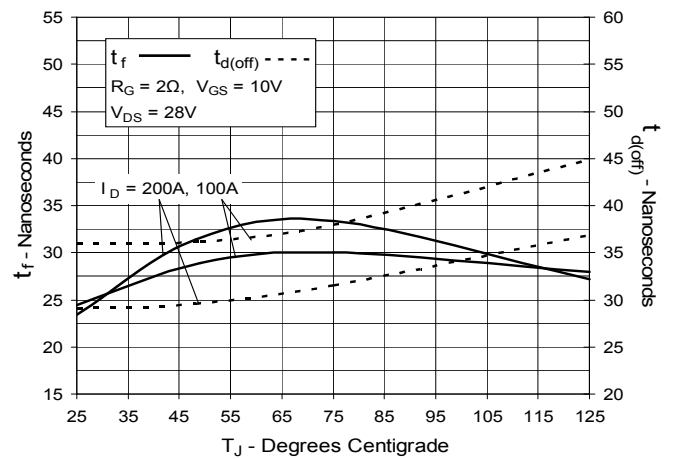
**Fig. 14. Resistive Turn-on
Rise Time vs. Drain Current**



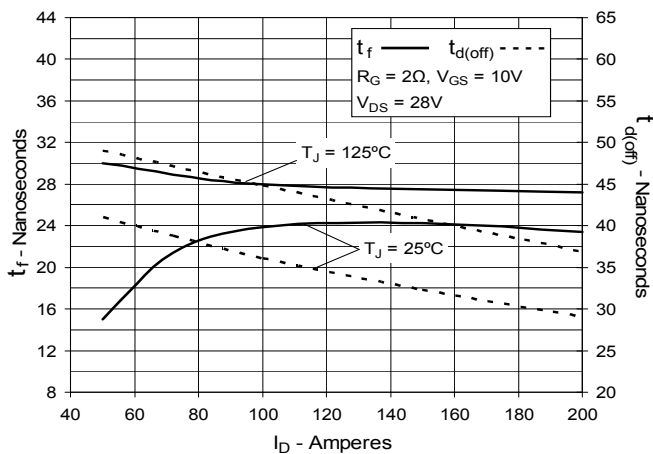
**Fig. 15. Resistive Turn-on
Switching Times vs. Gate Resistance**



**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**

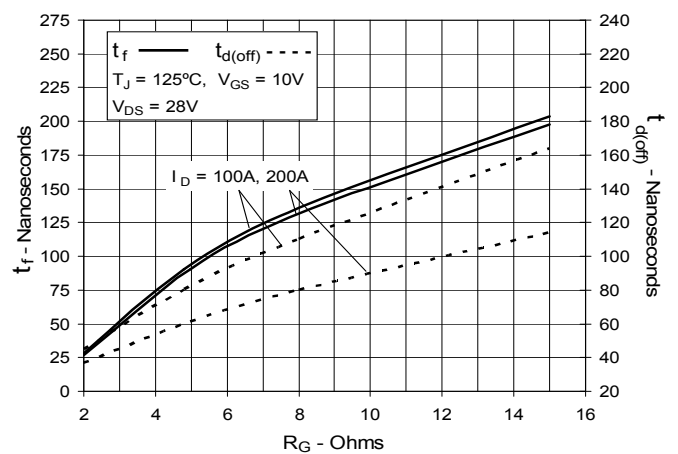


Fig. 19. Maximum Transient Thermal Impedance

