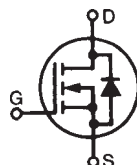


TrenchMV™ Power MOSFET

IXTH200N10T IXTQ200N10T

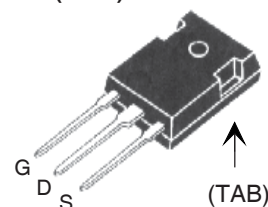
$$\begin{aligned} V_{DSS} &= 100V \\ I_{D25} &= 200A \\ R_{DS(on)} &\leq 5.5m\Omega \end{aligned}$$

N-Channel Enhancement Mode
Avalanche Rated

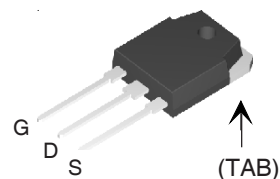


Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C}$ to 175°C	100	V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 175°C , $R_{GS} = 1M\Omega$	100	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_C = 25^\circ\text{C}$	200	A
I_{LRMS}	Lead Current Limit, RMS	75	A
I_{DM}	$T_C = 25^\circ\text{C}$, pulse width limited by T_{JM}	500	A
I_A	$T_C = 25^\circ\text{C}$	40	A
E_{AS}	$T_C = 25^\circ\text{C}$	1.5	J
P_D	$T_C = 25^\circ\text{C}$	550	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 Plastic body for 10 seconds	300 260	$^\circ\text{C}$ $^\circ\text{C}$
M_d	Mounting torque	1.13 / 10	Nm/lb.in.
Weight	TO-247	6.0	g
	TO-3P	5.5	g

TO-247 (IXTH)



TO-3P (IXTQ)



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

Features

- International standard packages
- 175°C Operating Temperature
- Avalanche Rated
- Low $R_{DS(on)}$

Advantages

- Easy to mount
- Space savings
- High power density

Applications

- Automotive
 - Motor Drives
 - High Side Switch
 - 12V Battery
 - ABS Systems
- DC/DC Converters and Off-line UPS
- Primary - Side Switch
- High Current Switching Applications

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$ unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{DSS}	$V_{GS} = 0V$, $I_D = 250\mu A$	100		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\mu A$	2.5		4.5 V
I_{GSS}	$V_{GS} = \pm 20V$, $V_{DS} = 0V$			± 200 nA
I_{DSS}	$V_{DS} = V_{DSS}$			5 μA
	$V_{GS} = 0V$ $T_J = 150^\circ\text{C}$			250 μA
$R_{DS(on)}$	$V_{GS} = 10V$, $I_D = 50A$, Notes 1, 2	4.5	5.5	m Ω

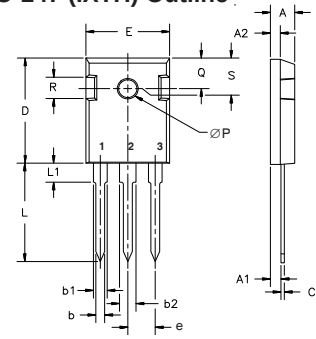
Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
g_{fs}	$V_{DS} = 10\text{V}$, $I_D = 60\text{A}$, Note 1	60	96	S
C_{iss}	$V_{GS} = 0\text{V}$, $V_{DS} = 25\text{V}$, $f = 1\text{MHz}$		9400	pF
C_{oss}			1087	pF
C_{rss}			140	pF
$t_{d(on)}$	Resistive Switching Times $V_{GS} = 10\text{V}$, $V_{DS} = 0.5 \cdot V_{DSS}$, $I_D = 50\text{A}$ $R_G = 3.3\Omega$ (External)		35	ns
t_r			31	ns
$t_{d(off)}$			45	ns
t_f			34	ns
$Q_{g(on)}$	$V_{GS} = 10\text{V}$, $V_{DS} = 0.5 \cdot V_{DSS}$, $I_D = 50\text{A}$		152	nC
Q_{gs}			47	nC
Q_{gd}			47	nC
R_{thJC}			0.27	$^\circ\text{C/W}$
R_{thCH}		0.25		$^\circ\text{C/W}$

Source-Drain Diode

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$, unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
I_S	$V_{GS} = 0\text{V}$			200 A
I_{SM}	Repetitive, Pulse width limited by T_{JM}			500 A
V_{SD}	$I_F = 50\text{A}$, $V_{GS} = 0\text{V}$, Note 1			1.0 V
t_{rr}	$I_F = 100\text{A}$, $V_{GS} = 0\text{V}$, $-di/dt = 100\text{A}/\mu\text{s}$ $V_R = 50\text{V}$		76	ns
Q_{RM}			205	nC
I_{RM}			5.4	A

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

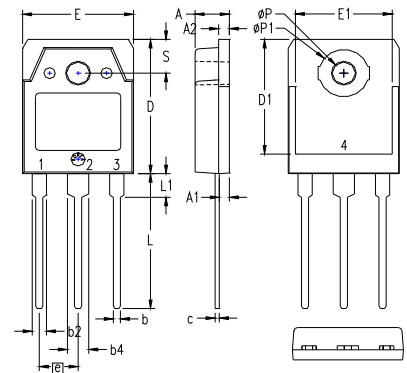
TO-247 (IXTH) Outline



Terminals: 1 - Gate 2 - 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

TO-3P (IXTQ) Outline



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

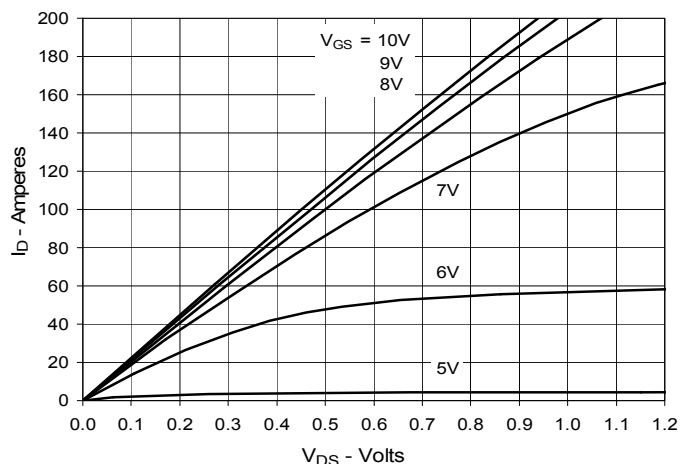
SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.185	.193	4.70	4.90
A1	.051	.059	1.30	1.50
A2	.057	.065	1.45	1.65
b	.035	.045	0.90	1.15
b2	.075	.087	1.90	2.20
b4	.114	.126	2.90	3.20
c	.022	.031	0.55	0.80
D	.780	.791	19.80	20.10
D1	.665	.677	16.90	17.20
E	.610	.622	15.50	15.80
E1	.531	.539	13.50	13.70
e	.215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

All metal area are tin plated.

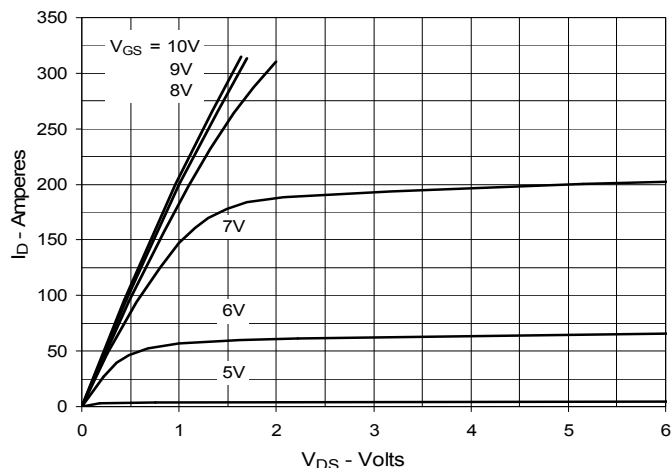
IXYS reserves the right to change limits, test conditions, and dimensions.

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	7,157,338B2
	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	

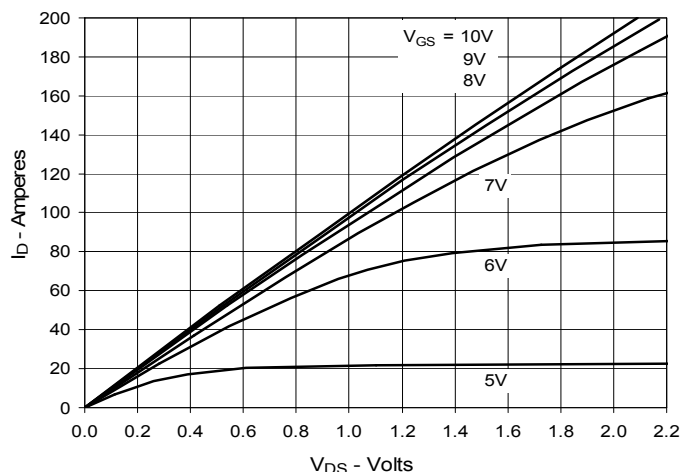
**Fig. 1. Output Characteristics
@ 25°C**



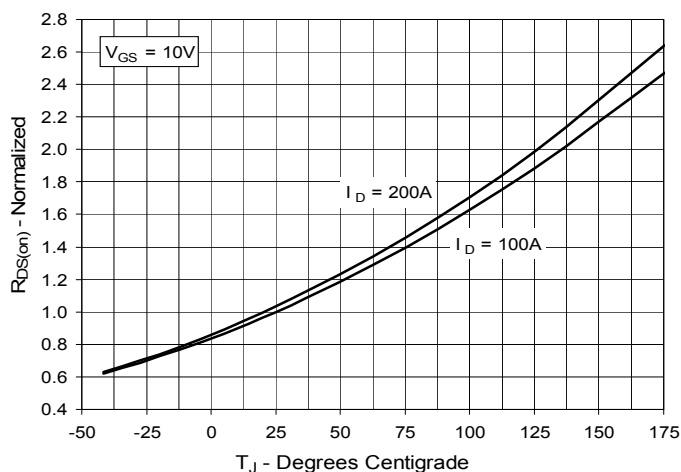
**Fig. 2. Extended Output Characteristics
@ 25°C**



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



**Fig. 4. $R_{DS(on)}$ Normalized to $I_D = 100A$ Value
vs. Junction Temperature**



**Fig. 5. $R_{DS(on)}$ Normalized to $I_D = 100A$ Value
vs. Drain Current**

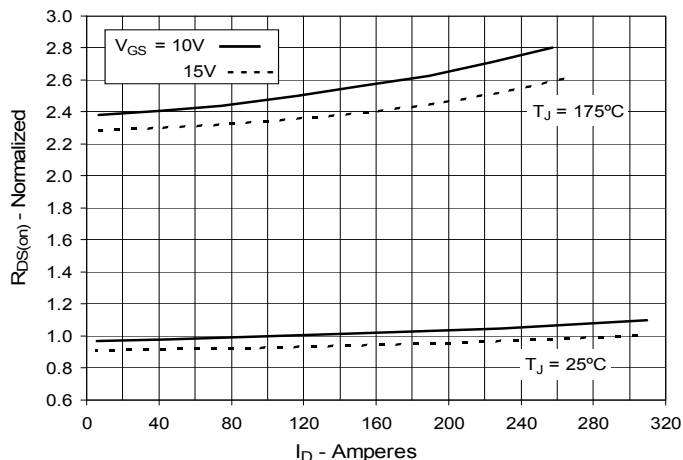


Fig. 6. Drain Current vs. Case Temperature

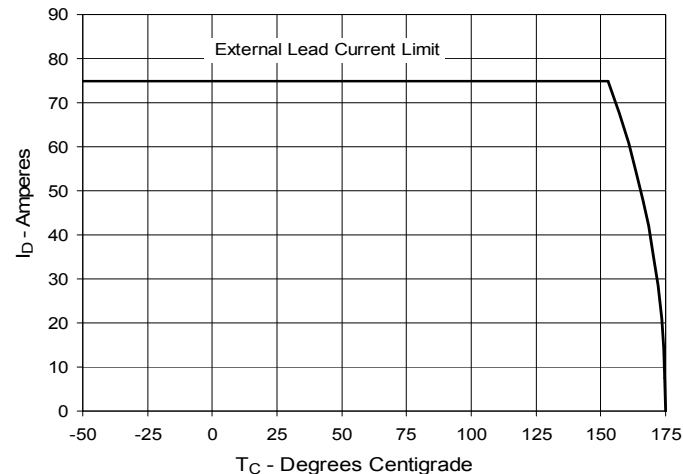


Fig. 7. Input Admittance

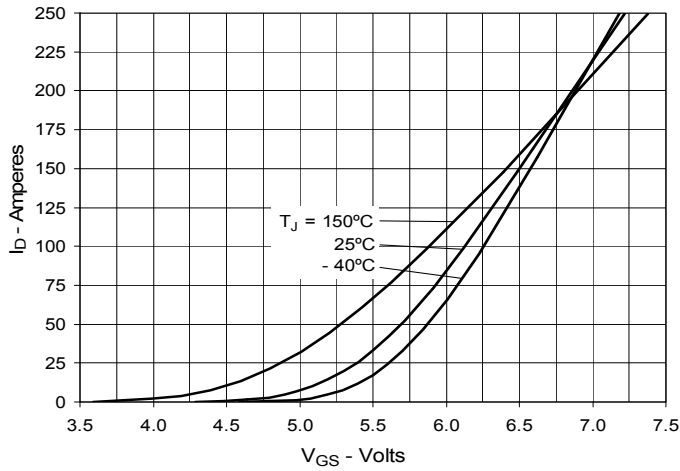


Fig. 8. Transconductance

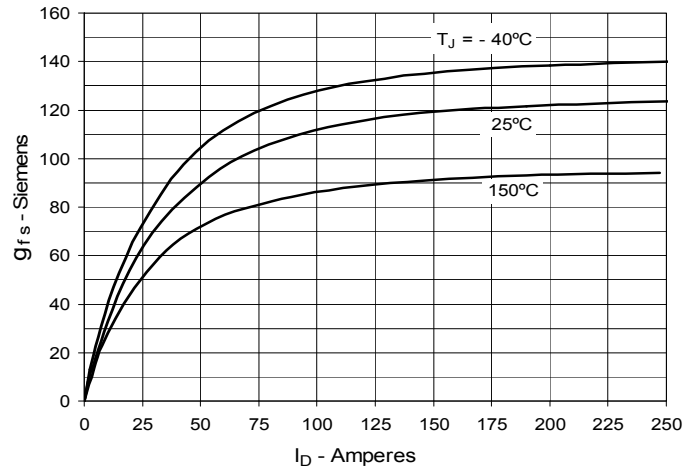


Fig. 9. Forward Voltage Drop of Intrinsic Diode

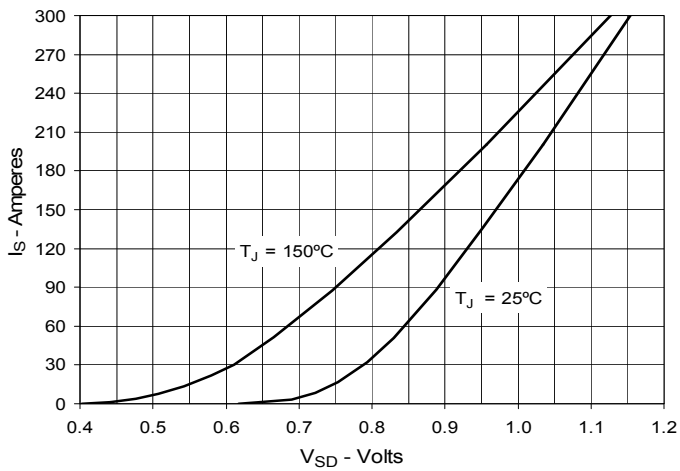


Fig. 10. Gate Charge

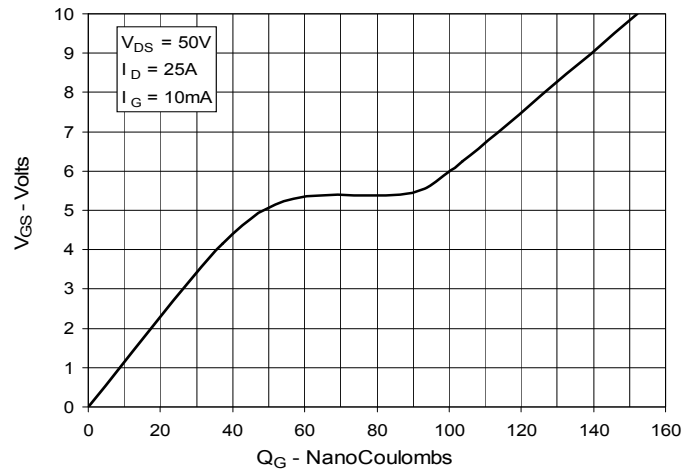


Fig. 11. Capacitance

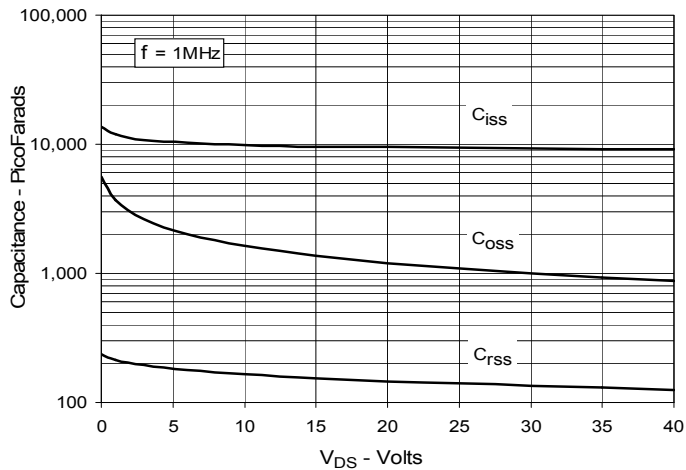
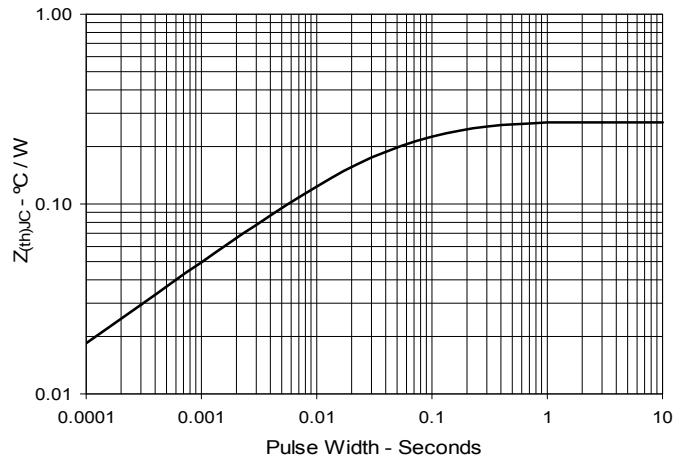
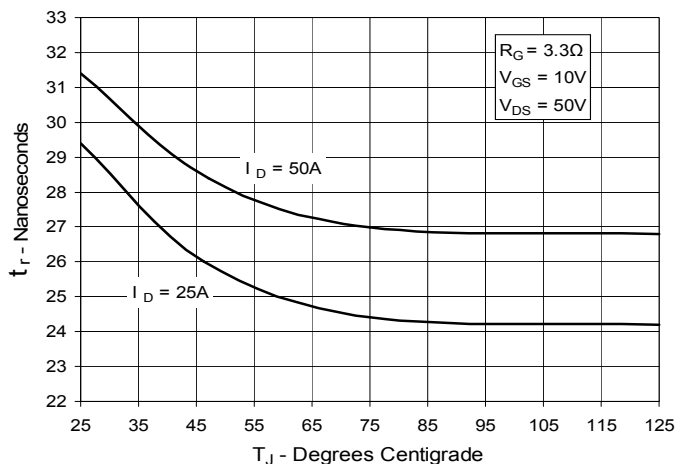


Fig. 12. Maximum Transient Thermal Impedance

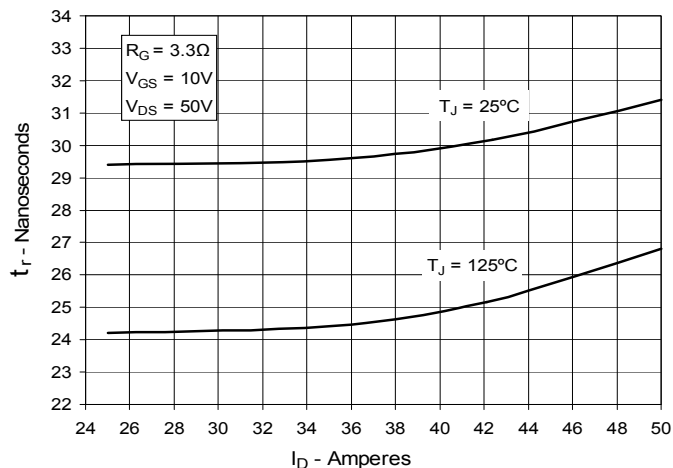


IXYS reserves the right to change limits, test conditions, and dimensions.

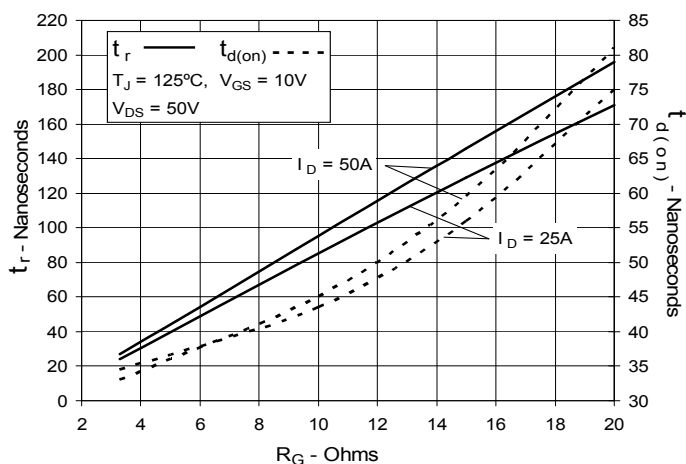
**Fig. 13. Resistive Turn-on
Rise Time vs. Junction Temperature**



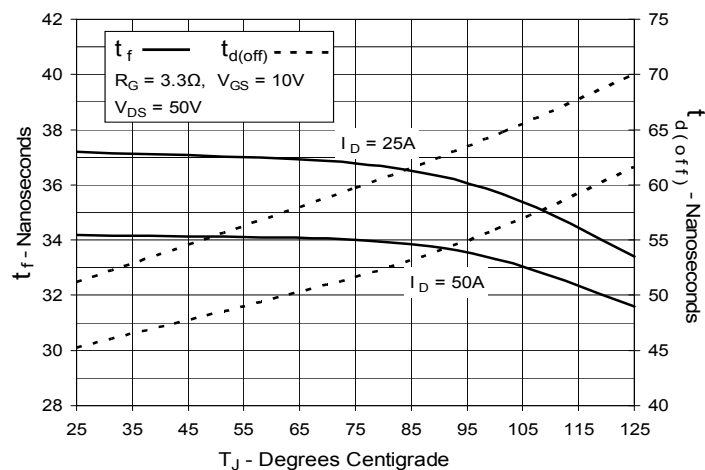
**Fig. 14. Resistive Turn-on
Rise Time vs. Drain Current**



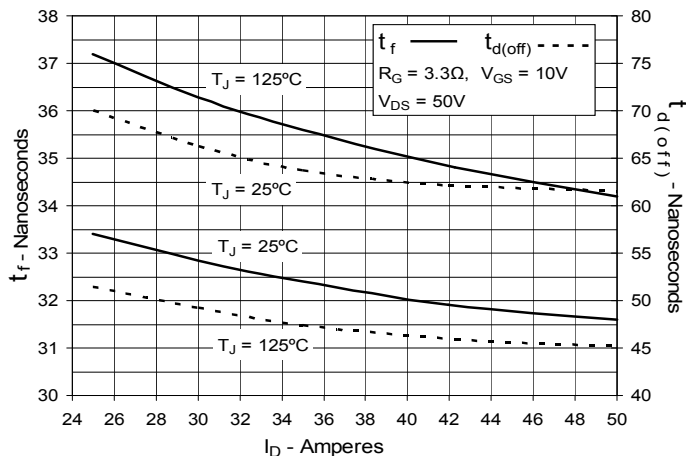
**Fig. 15. Resistive Turn-on
Switching Times vs. Gate Resistance**



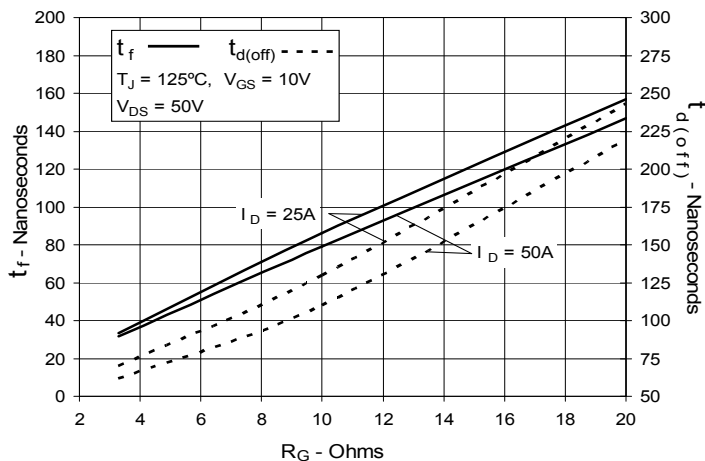
**Fig. 16. Resistive Turn-off
Switching Times vs. Junction Temperature**



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



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





Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.