

Symbol	Test Conditions	Characteristic Values		
		Min.	Typ.	Max.
g_{fs}	$V_{DS} = 10V, I_D = 0.5 \cdot I_{D25}, \text{ Note 1}$	9	12	15
C_{iss}	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$		8100	pF
C_{oss}			530	pF
C_{rss}			115	pF
R_{Gi}	Integrated Gate Input Resistor		3.5	Ω
$t_{d(on)}$	Resistive Switching Times $V_{GS} = 10V, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 \cdot I_{D25}$ $R_G = 0\Omega \text{ (External)}$		35	ns
t_r			117	ns
$t_{d(off)}$			94	ns
t_f			40	ns
$Q_{g(on)}$	$V_{GS} = 10V, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 \cdot I_{D25}$		240	nC
Q_{gs}			58	nC
Q_{gd}			135	nC
R_{thJC}	(TO-247&TO-3P)		0.25	$0.31^\circ C/W$
R_{thCS}				$^\circ C/W$

Safe Operating Area Specification

Symbol	Test Conditions	Characteristic Values		
		Min.	Typ.	Max.
SOA	$V_{DS} = 400V, I_D = 0.5A, T_C = 75^\circ C, T_p = 2s$	200		W

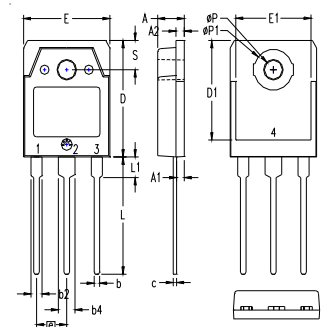
Source-Drain Diode

Symbol	Test Conditions	Characteristic Values		
		Min.	Typ.	Max.
I_s	$V_{GS} = 0V$			30 A
I_{SM}	Repetitive, Pulse Width Limited by T_{JM}			120 A
V_{SD}	$I_F = I_s, V_{GS} = 0V, \text{ Note 1}$			1.5 V
t_{rr}	$I_F = I_s, -di/dt = 100A/\mu s,$ $V_R = 100V, V_{GS} = 0V$		500	ns

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

TO-268 Outline					
		INCHES		MILLIMETERS	
SYM		MIN	MAX	MIN	MAX
A		.193	.201	4.90	5.10
A1		.106	.114	2.70	2.90
A2		.001	.010	0.02	0.25
b		.045	.057	1.15	1.45
b2		.075	.083	1.90	2.10
C		.016	.026	0.40	0.65
C2		.057	.063	1.45	1.60
D		.543	.551	13.80	14.00
D1		.488	.500	12.40	12.70
E		.624	.632	15.85	16.05
E1		.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
L1		.047	.055	1.20	1.40
L2		.039	.045	1.00	1.15
L3		.010 BSC		0.25 BSC	
L4		.150	.161	3.80	4.10

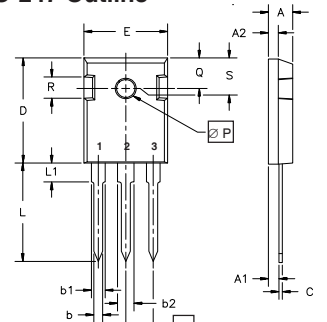
TO-3P Outline



1 - GATE
2 - DRAIN
3 - SOURCE
4 - 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	.799	19.80	20.30
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

TO-247 Outline



Terminals: 1 - Gate 2 - Drain
3 - Source

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	

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 @ $T_J = 25^\circ\text{C}$

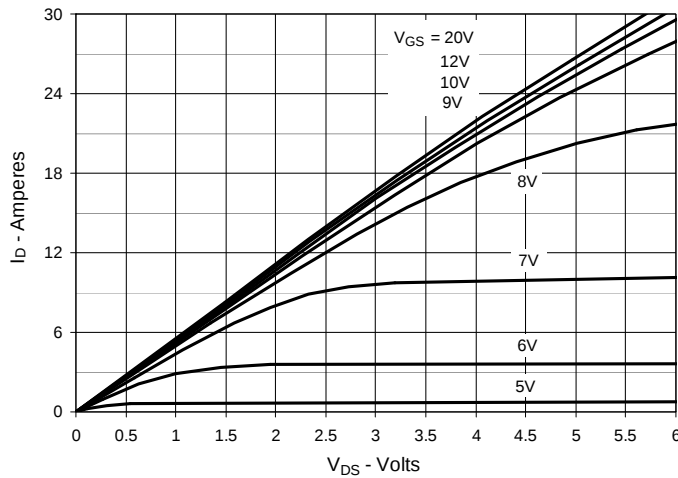


Fig. 2. Extended Output Characteristics @ $T_J = 25^\circ\text{C}$

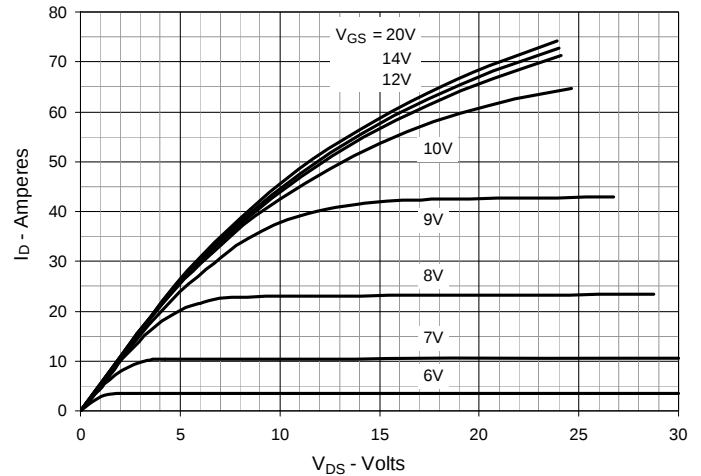


Fig. 3. Output Characteristics @ $T_J = 125^\circ\text{C}$

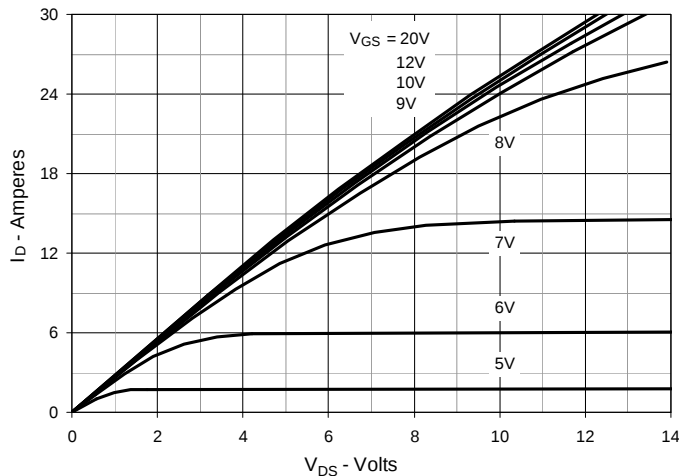


Fig. 4. $R_{DS(on)}$ Normalized to $I_D = 15\text{A}$ Value vs. Junction Temperature

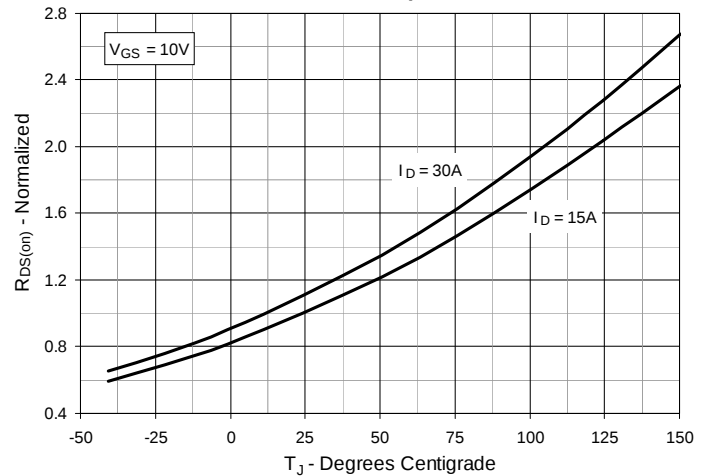


Fig. 5. $R_{DS(on)}$ Normalized to $I_D = 15\text{A}$ Value vs. Drain Current

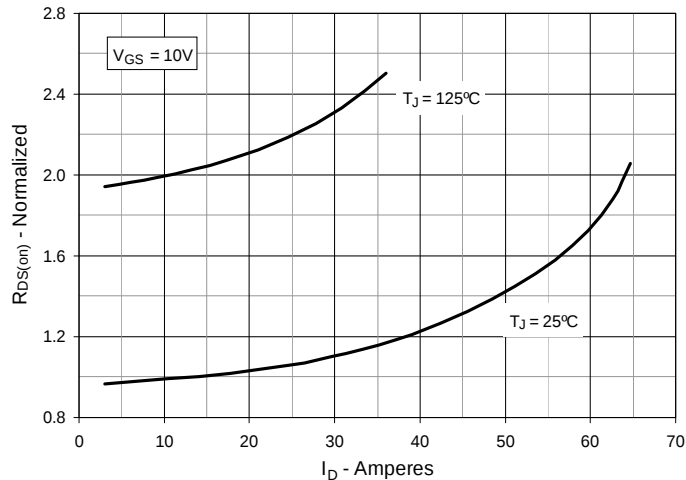


Fig. 6. Maximum Drain Current vs. Case Temperature

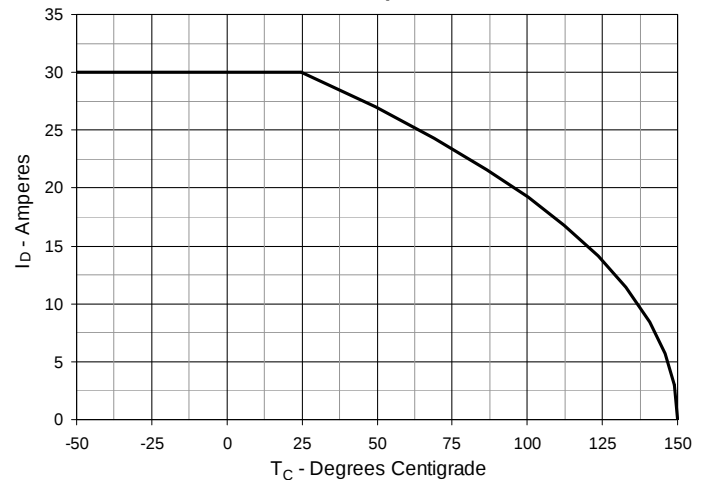


Fig. 7. Input Admittance

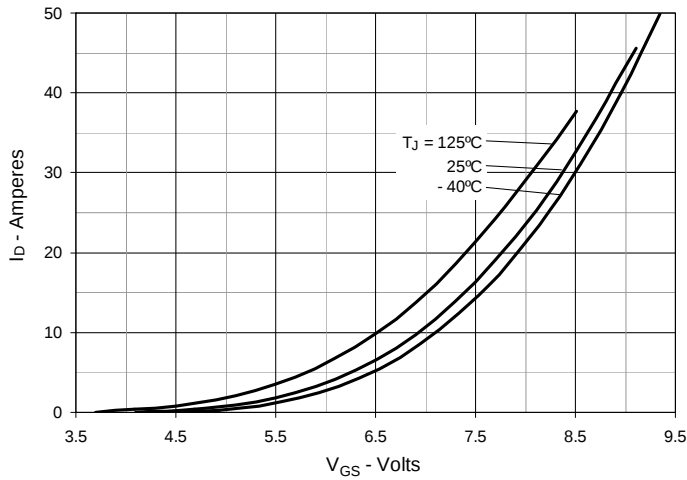


Fig. 8. Transconductance

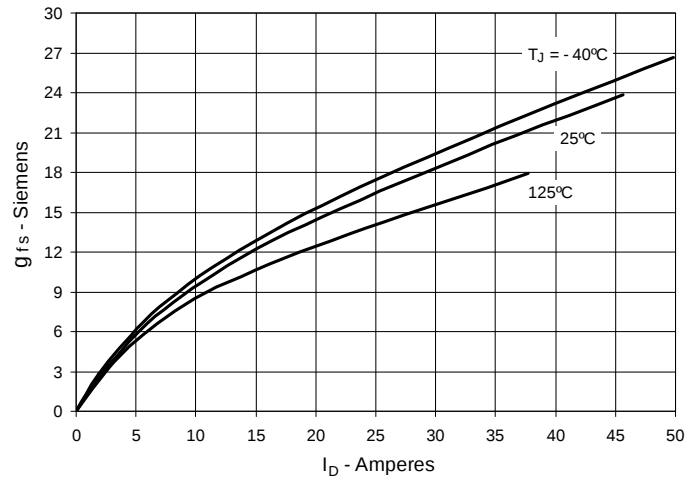


Fig. 9. Forward Voltage Drop of Intrinsic Diode

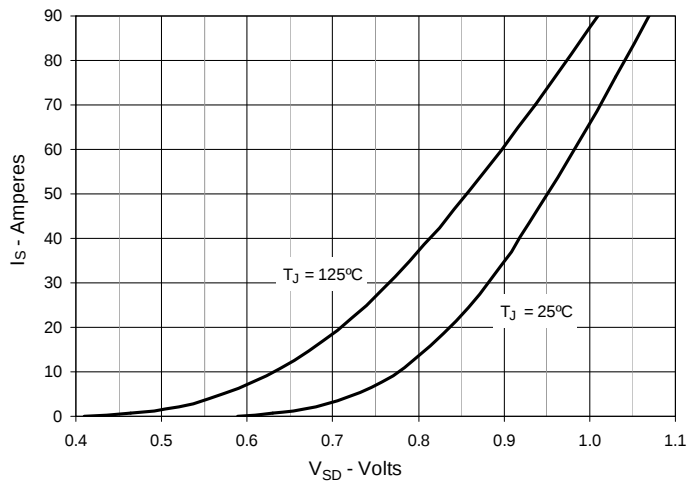


Fig. 10. Gate Charge

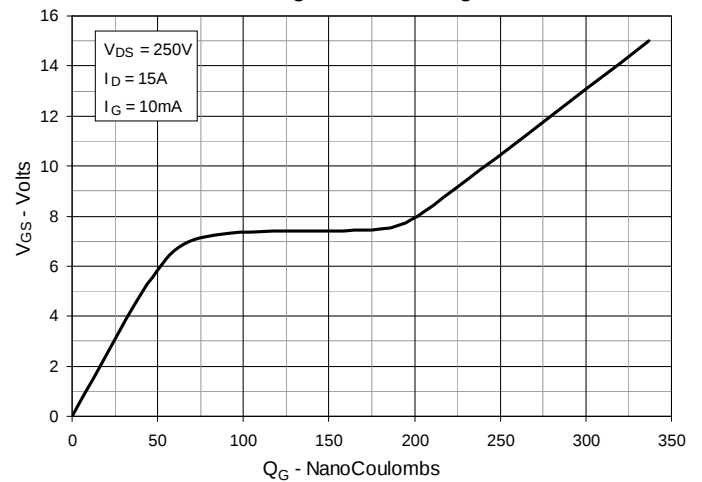


Fig. 11. Capacitance

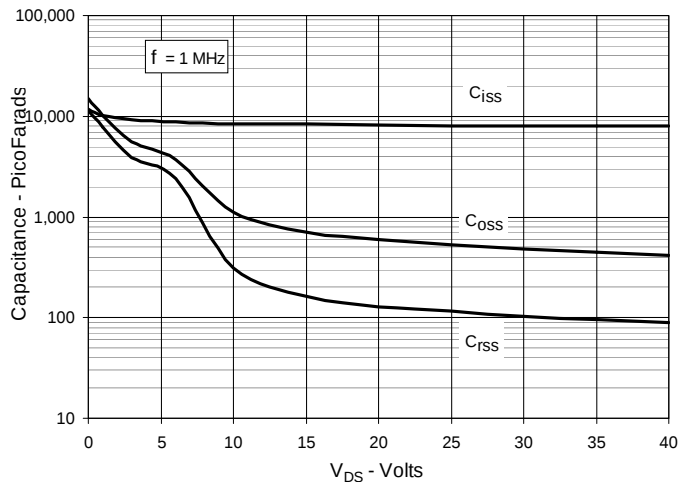


Fig. 12. Maximum Transient Thermal Impedance

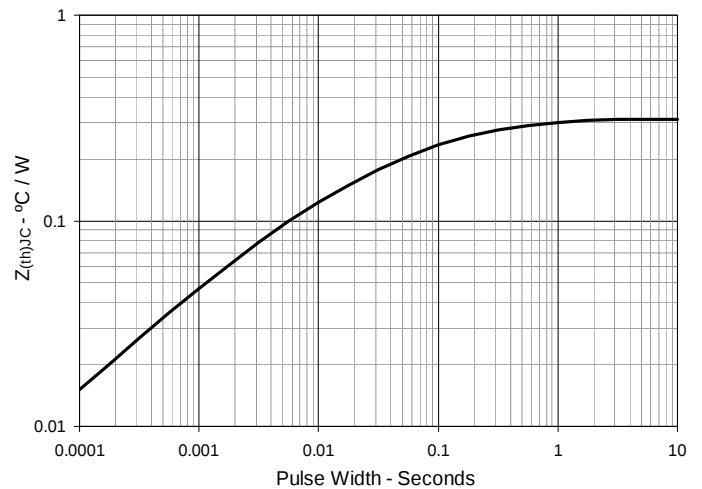


Fig. 13. Forward-Bias Safe Operating Area

@ $T_C = 25^\circ\text{C}$

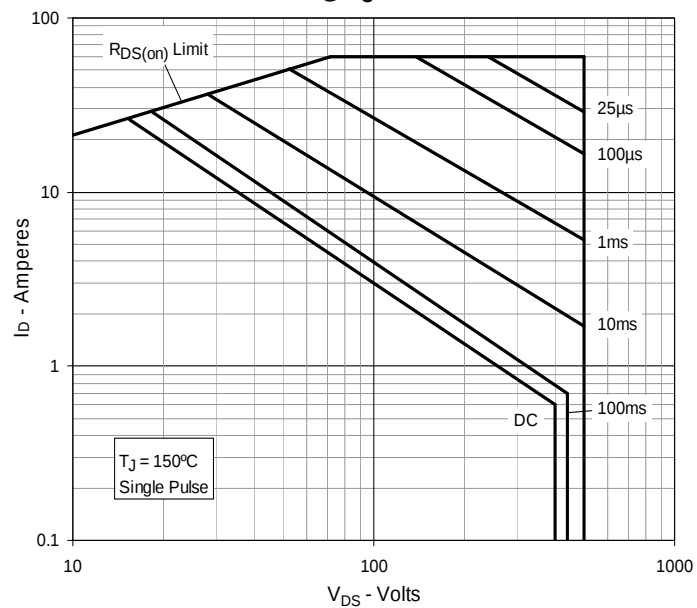
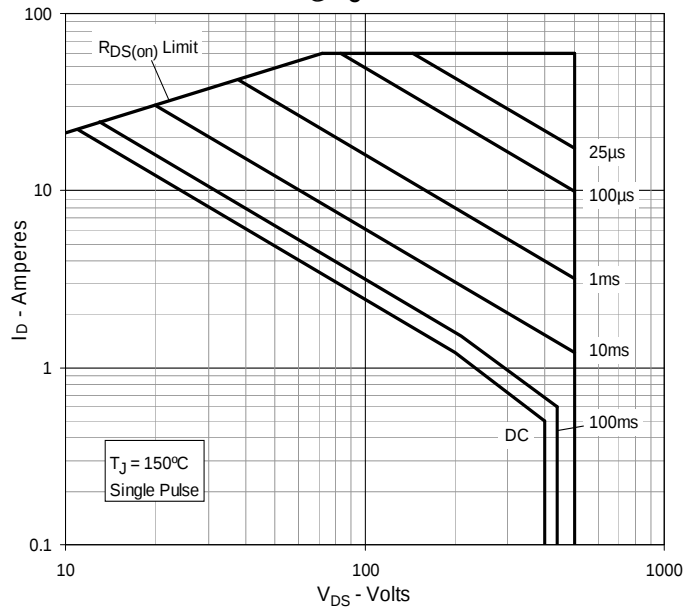


Fig. 14. Forward-Bias Safe Operating Area

@ $T_C = 75^\circ\text{C}$





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