



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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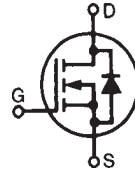


Linear L2™ Power MOSFET with extended FBSOA

IXTH30N60L2
IXTQ30N60L2
IXTT30N60L2

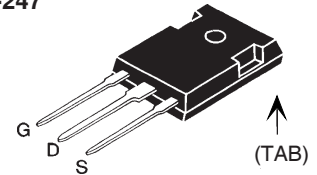
$V_{DSS} = 600V$
 $I_{D25} = 30A$
 $R_{DS(on)} \leq 240m\Omega$

N-Channel Enhancement Mode
Avalanche rated

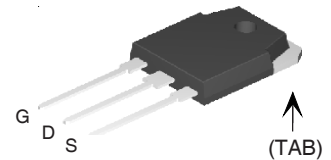


Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ C$ to $150^\circ C$	600	V
V_{DGR}	$T_J = 25^\circ C$ to $150^\circ C$, $R_{GS} = 1M\Omega$	600	V
V_{GSS}	Continuous	± 20	V
V_{GSM}	Transient	± 30	V
I_{D25}	$T_C = 25^\circ C$	30	A
I_{DM}	$T_C = 25^\circ C$, pulse width limited by T_{JM}	80	A
I_A	$T_C = 25^\circ C$	30	A
E_{AS}	$T_C = 25^\circ C$	2	J
P_D	$T_C = 25^\circ C$	540	W
T_J		-55 to +150	$^\circ C$
T_{JM}		+150	$^\circ C$
T_{stg}		-55 to +150	$^\circ C$
T_L	1.6mm (0.063in) from case for 10s	300	$^\circ C$
T_{SOLD}	Plastic body for 10s	260	$^\circ C$
M_d	Mounting torque (TO-247&TO-3P)	1.13/10	Nm/lb.in.
Weight	TO-247	6.0	g
	TO-3P	5.5	g
	TO-268	4.0	g

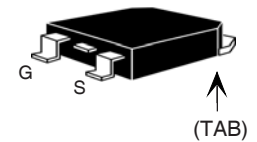
TO-247



TO-3P



TO-268



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

Symbol	Test Conditions ($T_J = 25^\circ C$, unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{DSS}	$V_{GS} = 0V$, $I_D = 1mA$	600		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250\mu A$	2.5		4.5 V
I_{GSS}	$V_{GS} = \pm 20V$, $V_{DS} = 0V$			± 100 nA
I_{DSS}	$V_{DS} = V_{DSS}$			50 μA
	$V_{GS} = 0V$ $T_J = 125^\circ C$			300 μA
$R_{DS(on)}$	$V_{GS} = 10V$, $I_D = 0.5 \cdot I_{D25}$, Note 1			240 m Ω

Features

- Designed for linear operation
- International standard packages
- Avalanche rated
- Molding epoxies meet UL 94 V-0 flammability classification
- Guaranteed FBSOA at $75^\circ C$

Applications

- Solid state circuit breakers
- Soft start controls
- Linear amplifiers
- Programmable loads
- Current regulators

Symbol	Test Conditions (T _J = 25°C, unless otherwise specified)	Characteristic Values						
		Min.	Typ.	Max.				
g_{fs}	$V_{DS} = 10V, I_D = 0.5 \cdot I_{D25}$, Note 1	10	14	18				
C_{iss}	$V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$		10.7	nF				
C_{oss}					600	pF		
C_{rss}							130	pF
t_{d(on)}	Resistive Switching Times $V_{GS} = 10V, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 \cdot I_{D25}$ $R_G = 2\Omega$ (External)		43	ns				
t_r					65	ns		
t_{d(off)}							123	ns
t_f								
Q_{g(on)}	$V_{GS} = 10V, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 \cdot I_{D25}$		335	nC				
Q_{gs}					58	nC		
Q_{gd}							212	nC
R_{thJC}	(TO-247&TO-3P)		0.25	0.23 °C/W				
R_{thCS}				°C/W				

Safe Operating Area Specification

Symbol	Test Conditions	Min.	Typ.	Max.
SOA	$V_{DS} = 480V, I_D = 0.6A, T_C = 75°C, tp = 3s$	288		W

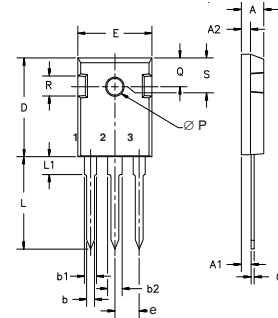
Source-Drain Diode

Characteristic Values
(T_J = 25°C, unless otherwise specified)

Symbol	Test Conditions	Min.	Typ.	Max.
I_s	$V_{GS} = 0V$			30 A
I_{SM}	Repetitive, pulse width limited by T _{JM}			120 A
V_{SD}	$I_F = I_S, V_{GS} = 0V$, Note 1			1.5 V
t_{rr}	$I_F = I_S, -di/dt = 100A/\mu s, V_R = 100V$		710	ns

Note 1: Pulse test, t ≤ 300μs; duty cycle, d ≤ 2%.

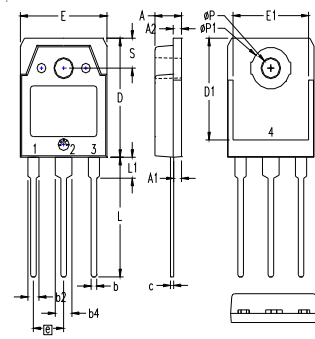
TO-247 (IXTH) Outline



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
∅P	3.55	3.65	.140	.144
∅P ₁	5.89	6.40	0.232	0.252
R	4.32	5.49	.170	.216
S	6.15 BSC		242 BSC	

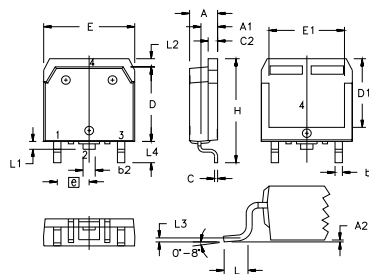
TO-3P (IXTQ) Outline



1 - GATE
2 - DRAIN (COLLECTOR)
3 - SOURCE (EMITTER)
4 - DRAIN (COLLECTOR)

SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.185	.193	4.70	4.90
A ₁	.051	.059	1.30	1.50
A ₂	.057	.065	1.45	1.65
b	.035	.045	0.90	1.15
b ₂	.075	.087	1.90	2.20
b ₄	.114	.126	2.90	3.20
c	.022	.031	0.55	0.80
D	.780	.799	19.80	20.30
D ₁	.665	.677	16.90	17.20
E	.610	.622	15.50	15.80
E ₁	.531	.539	13.50	13.70
e		.215 BSC		5.45 BSC
L	.779	.795	19.80	20.20
L ₁	.134	.142	3.40	3.60
∅P	.126	.134	3.20	3.40
∅P ₁	.272	.280	6.90	7.10
S	.193	.201	4.90	5.10

TO-268 (IXTT) 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

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.

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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

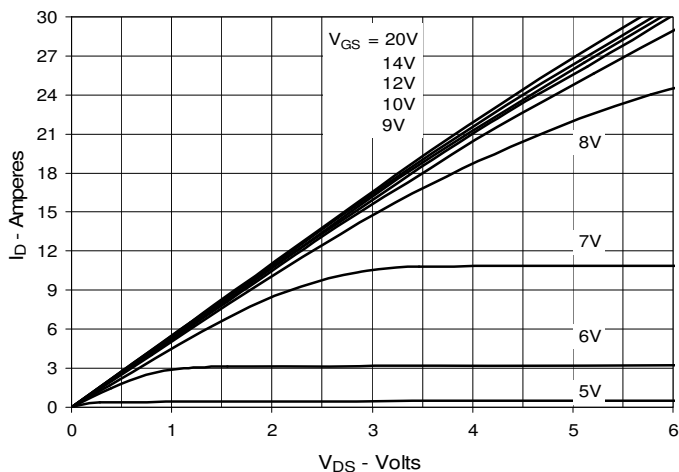


Fig. 2. Extended Output Characteristics
@ 25°C

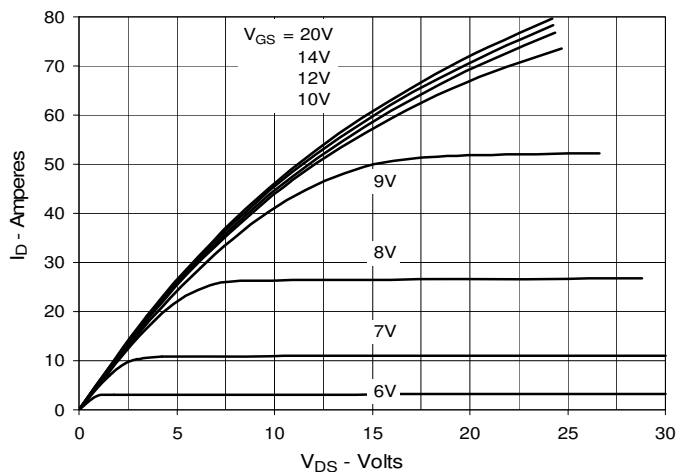


Fig. 3. Output Characteristics
@ 125°C

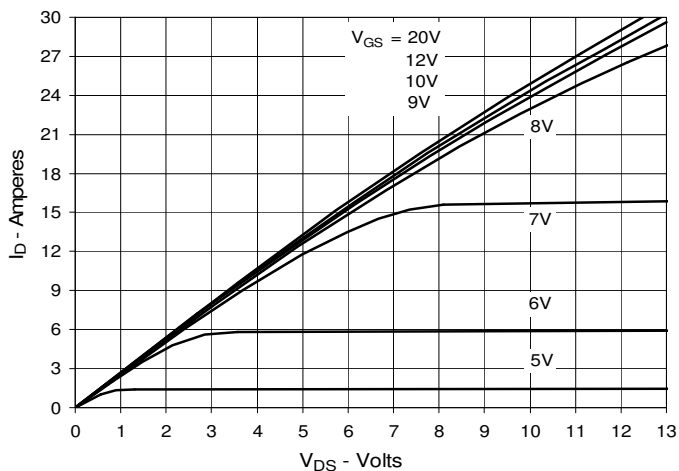


Fig. 4. $R_{DS(on)}$ Normalized to $I_D = 15A$ Value vs. Junction Temperature

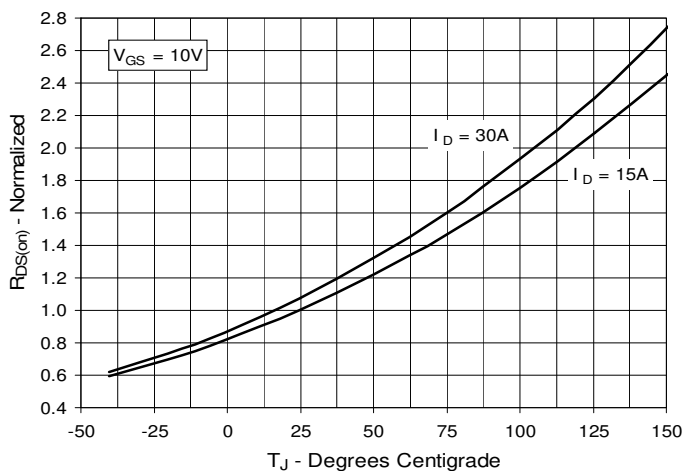


Fig. 5. $R_{DS(on)}$ Normalized to $I_D = 15A$ Value vs. Drain Current

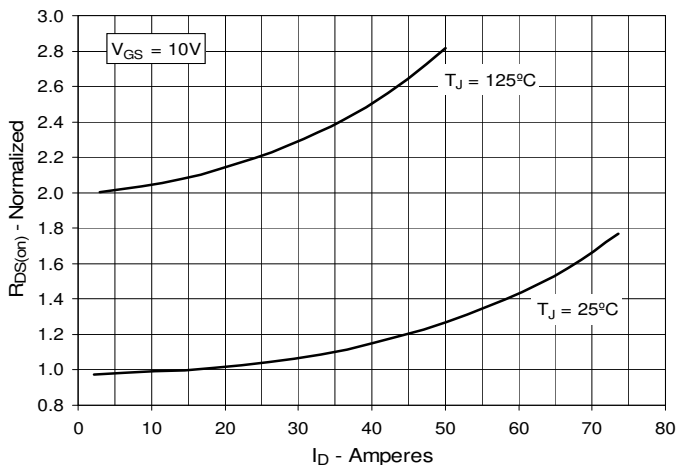


Fig. 6. Maximum Drain Current vs. Case Temperature

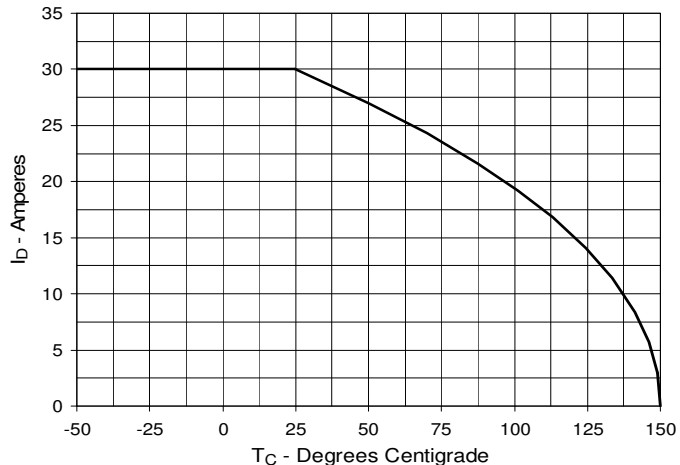


Fig. 7. Input Admittance

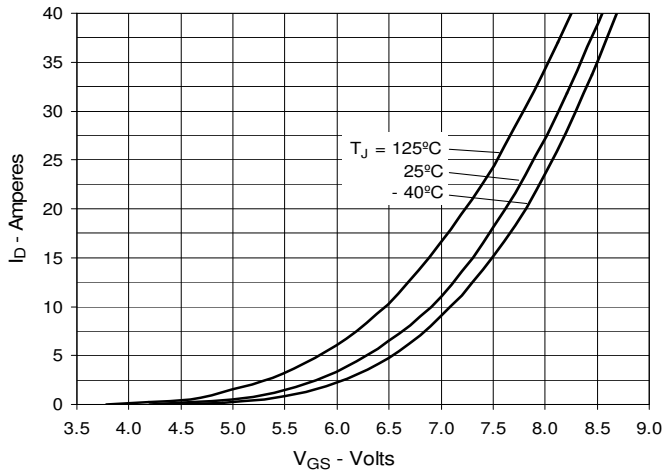


Fig. 8. Transconductance

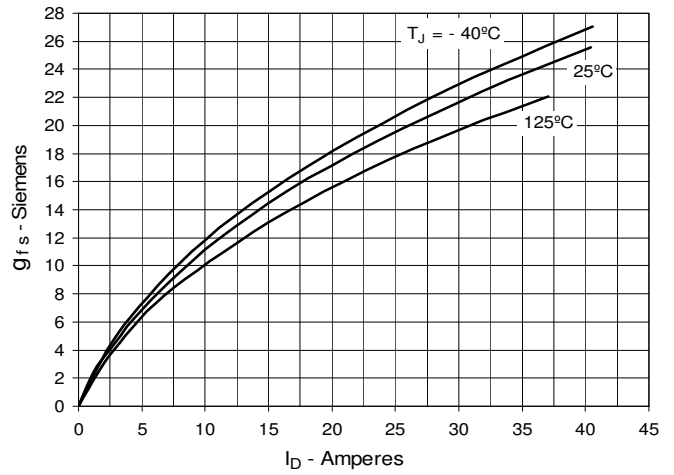


Fig. 9. Forward Voltage Drop of Intrinsic Diode

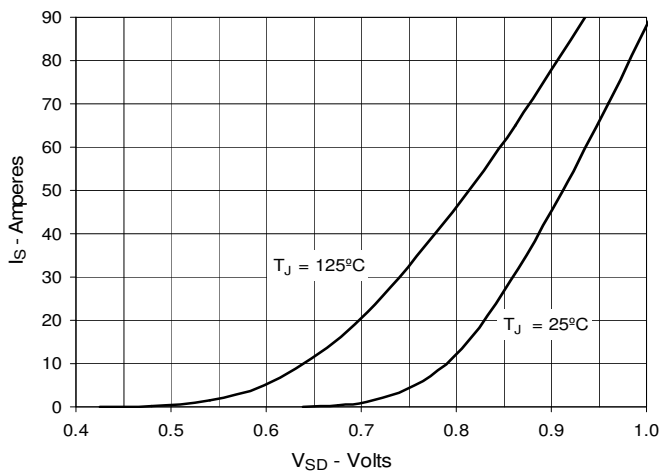


Fig. 10. Gate Charge

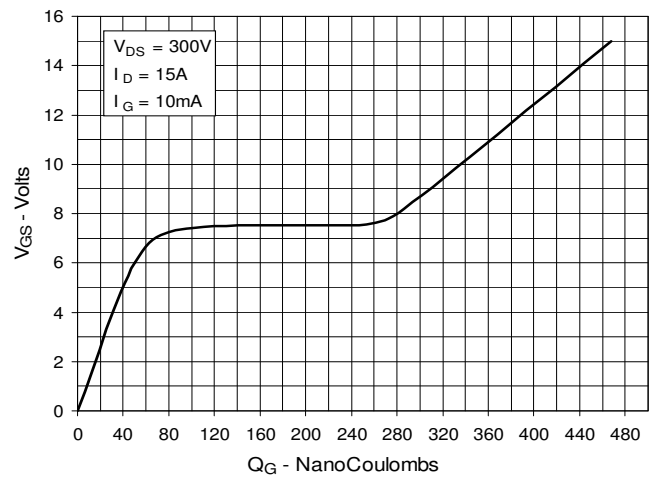


Fig. 11. Capacitance

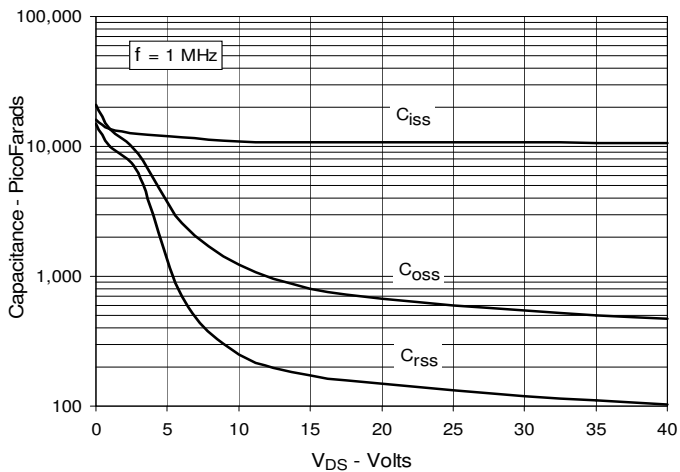


Fig. 12. Maximum Transient Thermal Impedance

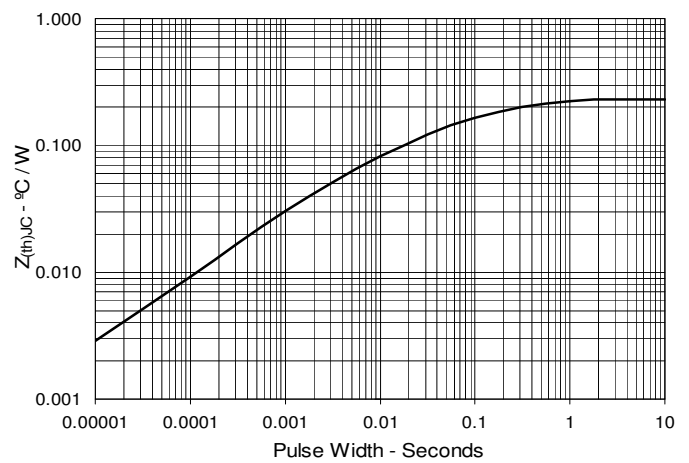


Fig. 13. Forward-Bias Safe Operating Area
@ $T_C = 25^\circ\text{C}$

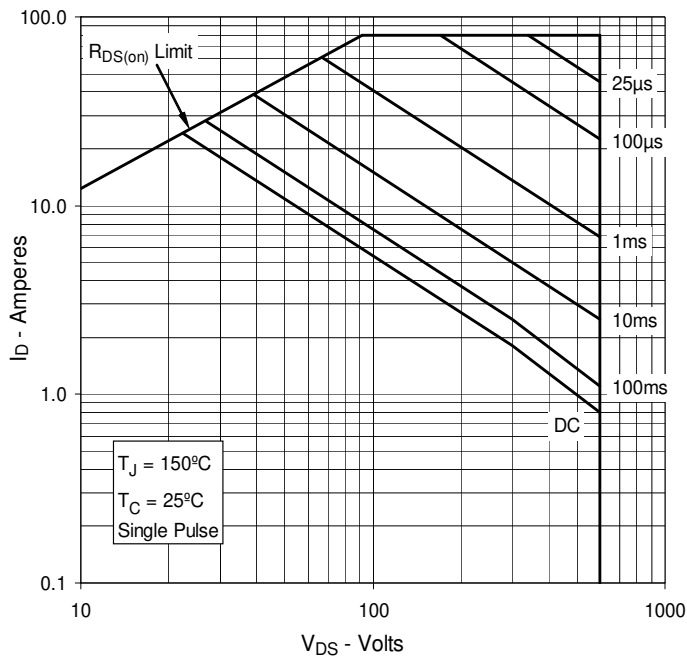


Fig. 14. Forward-Bias Safe Operating Area
@ $T_C = 75^\circ\text{C}$

