

Depletion Mode MOSFET

Test Conditions

TO-252

TO-263

TO-220

IXTY1R6N100D2 IXTA1R6N100D2 IXTP1R6N100D2

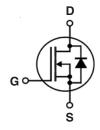
1000V V_{DSX} 1.6A D(on)

 10Ω

N-Channel

Symbol

Weight



Maximum Ratings

0.35

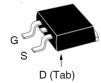
2.50

3.00

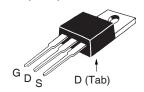
TO-252 (IXTY)



TO-263 AA (IXTA)



TO-220AB (IXTP)



G = Gate	D	= Drain
S = Source	Tab	= Drain

V_{DSX} $T_1 = 25^{\circ}C$ to $150^{\circ}C$ 1000 ٧ $\mathbf{V}_{\mathrm{gsx}}$ Continuous V ±20 V_{GSM} Transient ٧ ±30 \mathbf{P}_{D} $T_{c} = 25^{\circ}C$ 100 W T_{J} - 55 ... +150 °С \mathbf{T}_{JM} ٥С 150 °С - 55 ... +150 $\mathsf{T}_{\mathsf{stg}}$ ٥С T_L Maximum Lead Temperature for Soldering 300 1.6 mm (0.062in.) from Case for 10s 260 °C T_{SOLD} M^{q} Mounting Torque (TO-220) 1.13 / 10 Nm/lb.in.

Features

g

g

g

- · Normally ON Mode
- International Standard Packages
- Molding Epoxies Meet UL94 V-0 Flammability Classification

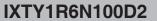
Advantages

- · Easy to Mount
- · Space Savings
- · High Power Density

Applications

- Audio Amplifiers
- Start-Up Circuits
- Protection Circuits
- Ramp Generators
- Current Regulators
- · Active Loads

Symbol Test Conditions Characteristic Values (T₁ = 25°C, Unless Otherwise Specified) Min. Typ. Max. $\mathbf{BV}_{\mathrm{DSX}}$ $V_{GS} = -5V, I_{D} = 250\mu A$ 1000 $V_{DS} = 25V, I_{D} = 100\mu A$ - 2.5 - 4.5 V_{GS(off)} $V_{GS} = \pm 20V, V_{DS} = 0V$ ±100 nA l_{GSX} $V_{DS} = V_{DSX}, V_{GS} = -5V$ 2 μΑ DSX(off) T, = 125°C 25 μΑ $\boldsymbol{R}_{DS(\underline{on})}$ $V_{GS} = 0V, I_{D} = 0.8A, \text{ Note 1}$ 10 Ω $V_{GS} = 0V, V_{DS} = 50V, \text{ Note 1}$ 1.6 Α D(on)





			racteristic Values		
$(T_J = 25^{\circ}C, \text{ Unless Otherwise Specified})$ Mir		Min.	Тур.	Max.	
\mathbf{g}_{fs}		$V_{DS} = 30V, I_{D} = 0.8A, \text{ Note 1}$	0.65	1.10	S
C _{iss})			645	pF
\mathbf{C}_{oss}	}	$V_{GS} = -10V, V_{DS} = 25V, f = 1MHz$		43	pF
\mathbf{C}_{rss}	J			11	pF
t _{d(on)})	Resistive Switching Times		27	ns
t _r	Ţ	$V_{GS} = \pm 5V, V_{DS} = 500V, I_{D} = 0.8A$		65	ns
$\mathbf{t}_{d(off)}$	(34	ns
t _f	J	$R_{\rm G} = 5\Omega$ (External)		41	ns
$\mathbf{Q}_{g(on)}$)			27.0	nC
Q_{gs}	}	$V_{GS} = 5V, V_{DS} = 500V, I_{D} = 0.8A$		1.6	nC
\mathbf{Q}_{gd}	J			13.5	nC
R _{thJC}		TO-220		0.50	1.25 °C/W °C/W

Safe-Operating-Area Specification

		Characteristic Values		
Symbol	Test Conditions	Min.	Тур.	Max.
SOA	$V_{DS} = 800V, I_{D} = 75mA, T_{C} = 75^{\circ}C, Tp = 5s$	60		W

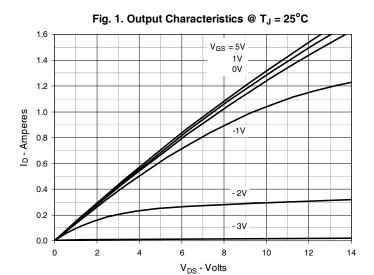
Source-Drain Diode

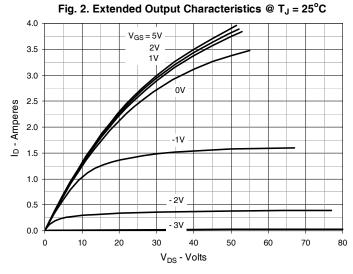
Symbol	Test Conditions	Characteristic Values		
$(T_{J} = 25^{\circ}C)$	C, Unless Otherwise Specified)	Min.	Тур.	Max.
V _{SD}	$I_F = 1.6A, V_{GS} = -10V, Note 1$		0.8	1.3 V
t _{rr}	$V_{-} = 100 \text{ V}, V_{-} = -10 \text{ V}$		970	ns
I _{RM}			9.96	A
Q _{RM} J GS		4.80	μC	

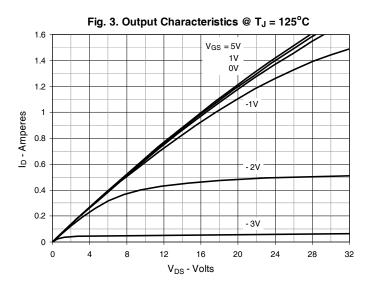
Note 1. Pulse test, $t \le 300\mu s$, duty cycle, $d \le 2\%$.

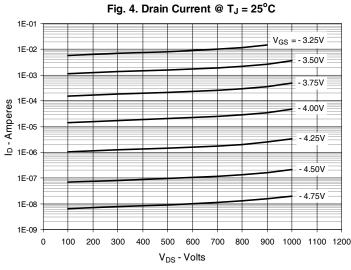
7,157,338B2

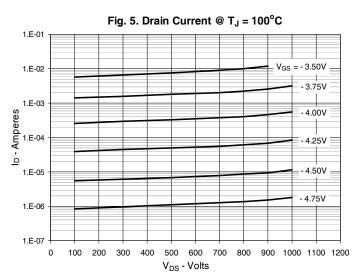












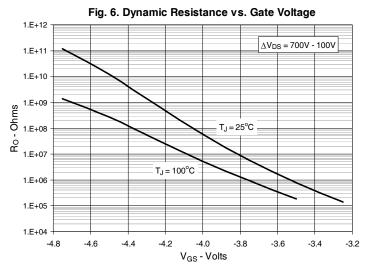




Fig. 7. Normalized $R_{DS(on)}$ vs. Junction Temperature

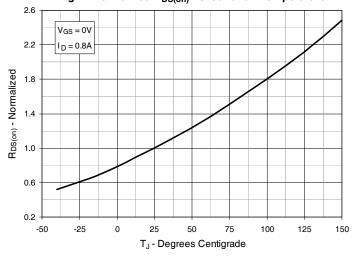


Fig. 8. $R_{DS(on)}$ Normalized to I_D = 0.8A Value

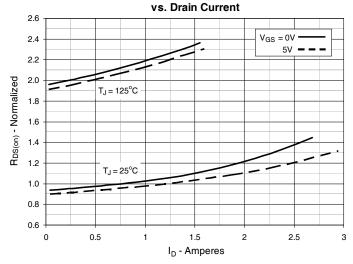


Fig. 9. Input Admittance

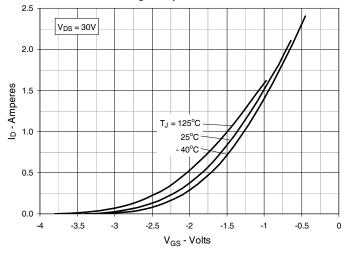


Fig. 10. Transconductance

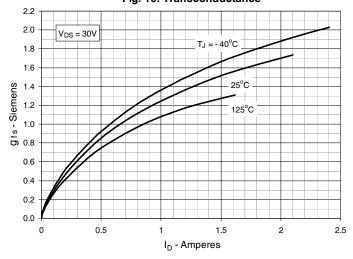


Fig. 11. Breakdown and Threshold Voltages

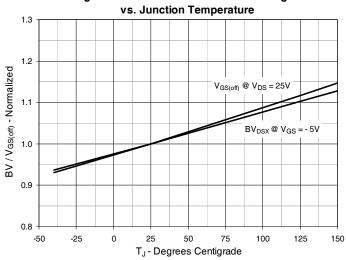
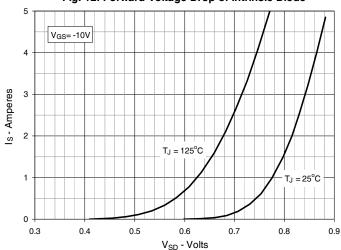
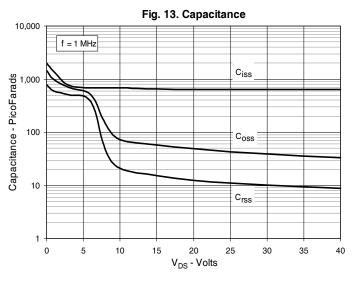


Fig. 12. Forward Voltage Drop of Intrinsic Diode



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





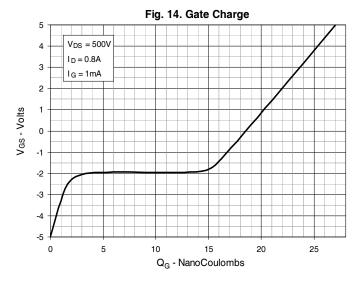


Fig. 15. Forward-Bias Safe Operating Area

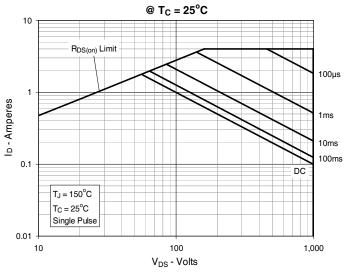


Fig. 16. Forward-Bias Safe Operating Area

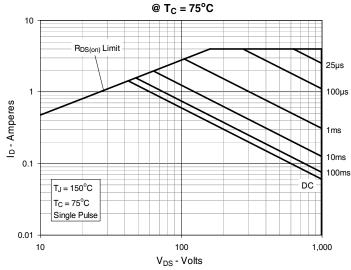
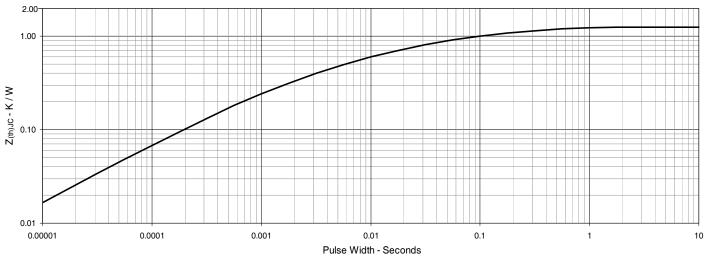


Fig. 17. Maximum Transient Thermal Impedance





IXTY1R6N100D2

IXTA1R6N100D2 IXTP1R6N100D2

