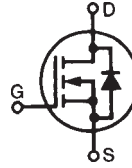


TrenchMV™ Power MOSFET

IXTA98N075T
IXTP98N075T

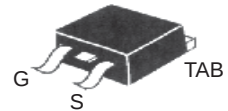
$$\begin{aligned} V_{DSS} &= 75 \text{ V} \\ I_{D25} &= 98 \text{ A} \\ R_{DS(on)} &\leq 10 \text{ m}\Omega \end{aligned}$$

N-Channel Enhancement Mode

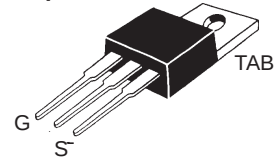


Symbol	Test Conditions	Maximum Ratings	
V_{DSS}	$T_J = 25^\circ\text{C}$ to 175°C	75	V
V_{DGR}	$T_J = 25^\circ\text{C}$ to 175°C ; $R_{GS} = 1 \text{ M}\Omega$	75	V
V_{GSM}	Transient	± 20	V
I_{D25}	$T_C = 25^\circ\text{C}$	98	A
I_{LRMS}	Package Current Limit (RMS):	75	A
I_{DM}	$T_C = 25^\circ\text{C}$, pulse width limited by T_{JM}	280	A
dv/dt	$I_S \leq I_{DM}$, $di/dt \leq 100 \text{ A}/\mu\text{s}$, $V_{DD} \leq V_{DSS}$ $T_J \leq 175^\circ\text{C}$, $R_G = 5 \Omega$	5	V/ns
I_{AR}	$T_C = 25^\circ\text{C}$	25	A
E_{AS}	$T_C = 25^\circ\text{C}$	600	mJ
P_d	$T_C = 25^\circ\text{C}$	230	W
T_J		-55 ... +175	$^\circ\text{C}$
T_{JM}		175	$^\circ\text{C}$
T_{stg}		-40 ... +175	$^\circ\text{C}$
T_L	1.6 mm (0.062 in.) from case for 10 s	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-220	3.0	g
	TO-263	2.5	g

TO-263 (IXTA)



TO-220 (IXTP)


G = Gate
S = Source

D = Drain
TAB = Drain

Features

- Ultra-low On Resistance
- Unclamped Inductive Switching (UIS) rated
- Low package inductance
 - easy to drive and to protect
- 175 $^\circ\text{C}$ Operating Temperature

Advantages

- Easy to mount
- Space savings
- High power density

Applications

- Automotive
 - Motor Drives
 - 42V Power Bus
 - ABS Systems
- DC/DC Converters and Off-line UPS
- Primary Switch for 24V and 48V Systems
- High Current Switching Applications

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$ unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
BV_{DSS}	$V_{GS} = 0 \text{ V}$, $I_D = 250 \mu\text{A}$	75		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 100 \mu\text{A}$	2.0		4.0 V
I_{GSS}	$V_{GS} = \pm 20 \text{ V}$, $V_{DS} = 0 \text{ V}$			$\pm 200 \text{ nA}$
I_{DSS}	$V_{DS} = V_{DSS}$			2 μA
	$V_{GS} = 0 \text{ V}$ $T_J = 150^\circ\text{C}$			150 μA
$R_{DS(on)}$	$V_{GS} = 10 \text{ V}$, $I_D = 25 \text{ A}$, Notes 1, 2			10 $\text{m}\Omega$

Symbol	Test Conditions ($T_J = 25^\circ\text{C}$ unless otherwise specified)	Characteristic Values		
		Min.	Typ.	Max.
g_{fs}	$V_{DS} = 10\text{ V}; I_D = 0.5 I_{D25}, \text{Note 1}$	38	64	S
C_{iss}	$V_{GS} = 0\text{ V}, V_{DS} = 25\text{ V}, f = 1\text{ MHz}$		3100	pF
C_{oss}			520	pF
C_{rss}			125	pF
$t_{d(on)}$	Resistive Switching Times		20	ns
t_r	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 V_{DSS}, I_D = 25\text{ A}$		42	ns
$t_{d(off)}$	$R_G = 5\ \Omega$ (External)		42	ns
t_f			27	ns
$Q_{g(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 V_{DSS}, I_D = 25\text{ A}$		68	nC
Q_{gs}			18	nC
Q_{gd}			15	nC
R_{thJC}			0.50	0.65°C/W
R_{thCS}				$^\circ\text{C/W}$

Source-Drain Diode

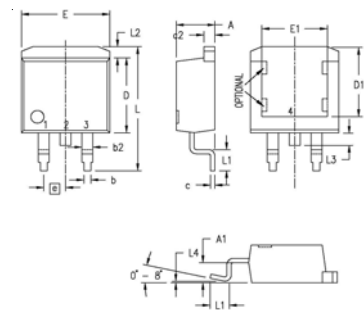
Symbol	Test Conditions	Characteristic Values	Min.	Typ.	Max.
I_S	$V_{GS} = 0\text{ V}$				98 A
I_{SM}	Repetitive				280 A
V_{SD}	$I_F = I_S, V_{GS} = 0\text{ V}, \text{Note 1}$				1.5 V
t_{rr}	$I_F = 49\text{ A}, -di/dt = 100\text{ A}/\mu\text{s}$ $V_R = 40\text{ V}, V_{GS} = 0\text{ V}$		50		ns

- Note 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 is 5 mm or less from the package body.

ADVANCE TECHNICAL INFORMATION

The product presented herein is under development. The Technical Specifications offered are derived from a subjective evaluation of the design, based upon prior knowledge and experience, and constitute a "considered reflection" of the anticipated result. IXYS reserves the right to change limits, test conditions, and dimensions without notice.

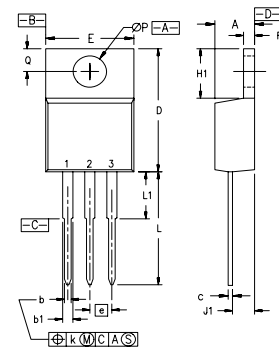
TO-263 (IXTA) Outline



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

Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.06	4.83	.160	.190
A1	2.03	2.79	.080	.110
b	0.51	0.99	.020	.039
b2	1.14	1.40	.045	.055
c	0.46	0.74	.018	.029
c2	1.14	1.40	.045	.055
D	8.64	9.65	.340	.380
D1	7.11	8.13	.280	.320
E	9.65	10.29	.380	.405
E1	6.86	8.13	.270	.320
e	2.54	BSC	.100	BSC
L	14.61	15.88	.575	.625
L1	2.29	2.79	.090	.110
L2	1.02	1.40	.040	.055
L3	1.27	1.78	.050	.070
L4	0	0.38	0	.015
R	0.46	0.74	.018	.029

TO-220 (IXTP) Outline





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