

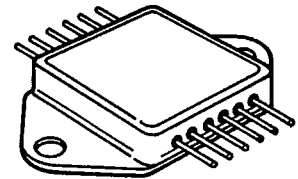


MAXIMUM RATINGS (PER DEVICE)

Parameter	Sym.	IXTE14N40X4	Unit
Drain-Source Voltage (1)	V_{DSS}	400	V_{dc}
Drain-Gate Voltage ($R_{GS} = 1.0M\Omega$) (1)	V_{DGR}	400	V_{dc}
Gate-Source Voltage Continuous	V_{GS}	± 20	V_{dc}
Gate-Source Voltage Transient	V_{GSM}	± 30	V
Drain Current Continuous ($T_C = 25^\circ C$)	I_D	14	A_{dc}
Drain Current Pulsed (3)	I_{DM}	56	A
Total Power Dissipation	P_D	125	W
Power Dissipation Derating $> 25^\circ C$		1.0	W/ $^\circ C$
Operating and Storage Temperature	T_J & T_{stg}	-65 to +150	$^\circ C$
Thermal Resistance	R_{thJC}	1.0	$^\circ C/W$
Max. Lead Temp. for Soldering	T_L	300 (1.6mm from case for 10 sec.)	$^\circ C$

T-39-13
IXTE14N40X4

14 AMPS, 400 VOLTS, 0.3 OHMS




HERMETIC QUADPAC

ELECTRICAL CHARACTERISTICS $T_C = 25^\circ C$ unless otherwise specified (PER DEVICE)

Parameter	Type	Min.	Typ.	Max.	Units	Test Conditions
$V_{(BR)DSS}$ Drain-Source Breakdown Voltage	14N40X4	400	—	—	V	$V_{GS} = 0V$ $I_D = 250\mu A$
$V_{GS(th)}$ Gate Threshold Voltage	ALL	2.0	—	4.5	V	$V_{DS} = V_{GS}$, $I_D = 250\mu A$
I_{GSS} Gate-Source Leakage	ALL	—	—	100	nA	$V_{GS} = \pm 20V$
I_{DSS} Zero Gate Voltage Drain Current	ALL	—	—	200	μA	$V_{DS} = 0.8 BV_{DSS}$, $V_{GS} = 0V$
		—	—	1000	μA	$V_{DS} = 0.8 BV_{DSS}$, $V_{GS} = 0V$, $T_C = 125^\circ C$
$R_{DS(on)}$ Static Drain-Source On-State Resistance (2)	ALL	—	—	0.3	Ω	$V_{GS} = 10V$, $I_D = 0.5 I_D$ Max.
g_{FS} Forward Transconductance (2)	ALL	8	—	—	S	$V_{DS} > I_{D(on)} \times R_{DS(on)max}$, $I_D = 0.5 I_D$ Max.
C_{iss} Input Capacitance	ALL	—	—	3200	pF	$V_{GS} = 0V$, $V_{DS} = 25V$, $f = 1.0$ MHz
C_{oss} Output Capacitance	ALL	—	—	400	pF	
C_{rss} Reverse Transfer Capacitance	ALL	—	—	120	pF	
$t_{d(on)}$ Turn-On Delay Time	ALL	—	—	70	ns	$V_{DD} = 0.5 BV_{DSS}$, $I_D = 0.5 I_D$ Max. $Z_O = 50\Omega$ (MOSFET switching times are essentially independent of operating temperature.)
t_r Rise Time	ALL	—	—	70	ns	
$t_{d(off)}$ Turn-Off Delay Time	ALL	—	—	155	ns	
t_f Fall Time	ALL	—	—	65	ns	
Q_g Total Gate Charge (Gate-Source Plus Gate-Drain)	ALL	—	—	60	nC	$V_{GS} = 10V$, $I_D = I_D$ Max., $V_{DS} = 0.8 BV_{DSS}$, (Gate charge is essentially independent of operating temperature.)
Q_{gs} Gate Source Charge	ALL	—	—	20	nC	
Q_{gd} Gate-Drain ("Miller") Charge	ALL	—	—	40	nC	

SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS $T_C = 25^\circ C$ unless otherwise specified (PER DEVICE)

I_S Continuous Source Current (Body Diode)	ALL	—	—	14	A	Modified MOSFET symbol showing the integral reverse P-N junction rectifier. 
I_{SM} Pulse Source Current (Body Diode) (1)	ALL	—	—	56	A	
V_{SD} Diode Forward Voltage (2)	ALL	—	—	1.5	V	$I_F = I_S$, $V_{GS} = 0V$
t_{rr} Reverse Recovery Time	ALL	—	400	—	ns	$V_R = 100V$
Q_{rr} Reverse Recovery Charge	ALL	—	6.6	—	uC	$T_J = 25^\circ C$
		—	13.2	—		$T_J = 150^\circ C$

(1) $T_J = 25^\circ C$ to $150^\circ C$
(2) Pulse test: Pulse width $\leq 300\mu S$, duty cycle $\leq 2\%$

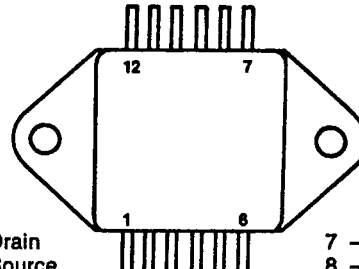
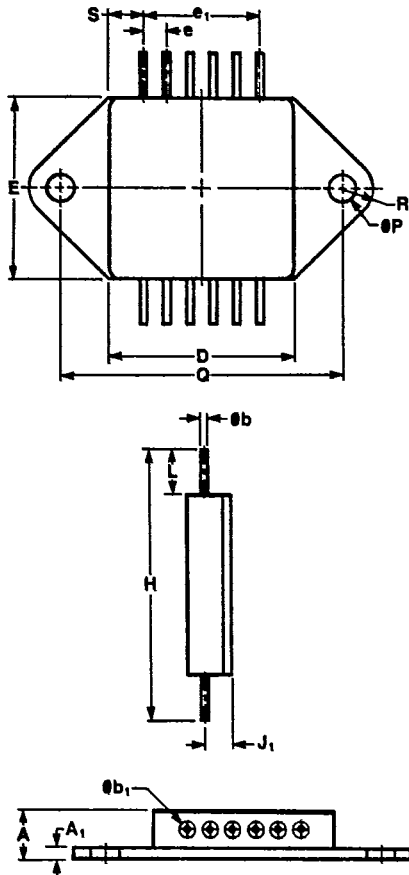
(3) Repetitive rating: Pulse width limited by max. junction temperature.

T-91-20

PACKAGE OUTLINE

QUADPAC AA (STRAIGHT LEAD)

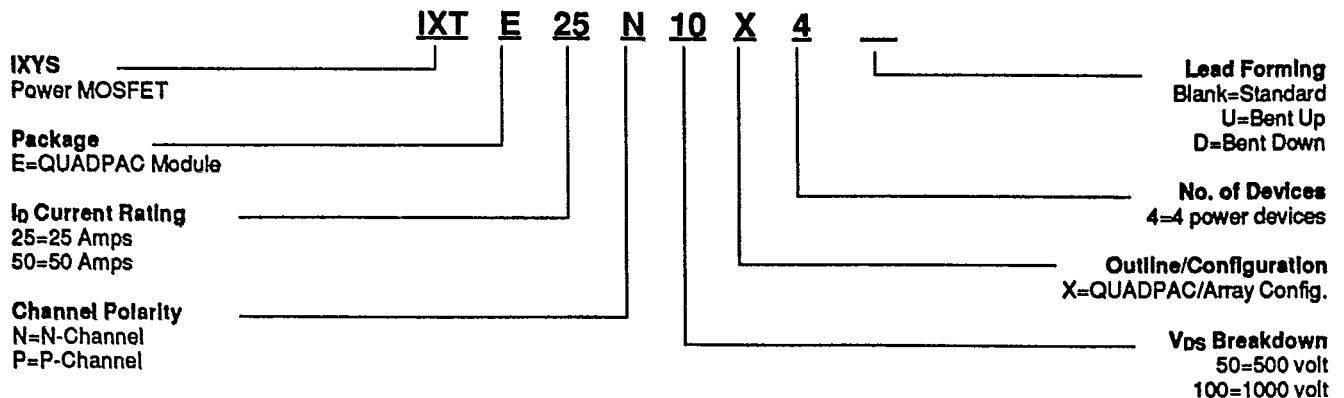
- Notes:
 1) Controlling dimensions: inch. In case of conflict between the English and metric dimensions, the inch dimensions control.
 2) Dimensioning and tolerancing per ANSI Y14.54-1982.
 3) Symbols are defined in the "No Series Symbol List" in Section 2-2 of publication no. 95.
 4) Lid offset dimension not included.



- 1 - Drain
 2 - Source
 3 - Gate
 4 - Gate
 5 - Source
 6 - Drain
 7 - Drain
 8 - Source
 9 - Gate
 10 - Gate
 11 - Source
 12 - Drain
- CASE NO CONNECTION

Dim. (Straight Lead)	Inches		Millimeters	
	Min.	Max.	Min.	Max.
A	.240	.280	6.10	7.11
A ₁	.045	.055	1.14	1.40
Øb	.035	.045	0.89	1.14
Øb ₁	.080	.105	2.03	2.67
D	.980	1.020	24.89	25.91
E	.980	1.020	24.89	25.91
e	.125 BSC.		3.18 BSC.	
e ₁	.625 BSC.		15.88 BSC.	
H	1.480	1.520	37.59	38.61
J ₁	.148	.168	3.77	4.27
L	.240	.260	6.10	6.60
ØP	.151	.161	3.84	4.09
Q	1.506	1.530	38.27	38.88
R	.165	.175	4.19	4.44
S	.180	.196	4.57	4.98

PART NUMBER DESCRIPTION



Note: Valid combinations are only those referenced in the IXYS price book or Product Selector Guide. Consult your local IXYS sales office to confirm availability of specific combinations or new types.