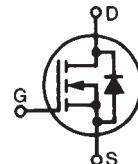


PolarHT™ Power MOSFET

IXTQ 96N15P IXTT 96N15P

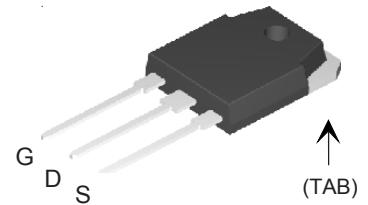
V_{DSS}	=	150	V
I_{D25}	=	96	A
$R_{DS(on)}$	\leq	24	$m\Omega$

N-Channel Enhancement Mode
Avalanche Rated

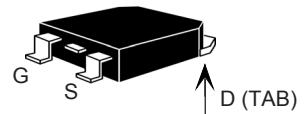


Symbol	Test Conditions	Maximum Ratings		
V_{DSS}	$T_J = 25^\circ C$ to $150^\circ C$	150	V	
V_{DGR}	$T_J = 25^\circ C$ to $150^\circ C$; $R_{GS} = 1 M\Omega$	150	V	
V_{GSS}	Continuous	± 20	V	
V_{GSM}	Transient	± 30	V	
I_{D25}	$T_c = 25^\circ C$	96	A	
$I_{D(RMS)}$	External lead current limit	75	A	
I_{DM}	$T_c = 25^\circ C$, pulse width limited by T_{JM}	250	A	
I_{AR}	$T_c = 25^\circ C$	60	A	
E_{AR}	$T_c = 25^\circ C$	40	mJ	
E_{AS}	$T_c = 25^\circ C$	1.0	J	
dv/dt	$I_s \leq I_{DM}$, $di/dt \leq 100 A/\mu s$, $V_{DD} \leq V_{DSS}$ $T_j \leq 150^\circ C$, $R_G = 4 \Omega$	10	V/ns	
P_D	$T_c = 25^\circ C$	480	W	
T_J		-55 ... +175	$^\circ C$	
T_{JM}		175	$^\circ C$	
T_{stg}		-55 ... +150	$^\circ C$	
T_L	1.6 mm (0.062 in.) from case for 10 s	300	$^\circ C$	
T_{SOLD}	Plastic body for 10 s	260	$^\circ C$	
M_d	Mounting torque (TO-3P)	1.13/10	Nm/lb.in.	
Weight	TO-3P	5.5	g	
	TO-268	5.0	g	

TO-3P (IXTQ)



TO-268 (IXTT)



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

Features

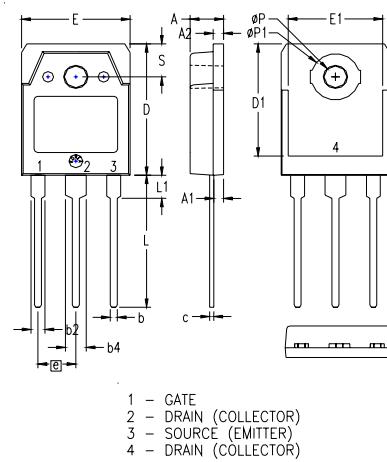
- International standard packages
- Unclamped Inductive Switching (UIS) rated
- Low package inductance
 - easy to drive and to protect

Advantages

- Easy to mount
- Space savings
- High power density

Symbol	Test Conditions	Characteristic Values		
	($T_j = 25^\circ C$, unless otherwise specified)	Min.	Typ.	Max.
BV_{DSS}	$V_{GS} = 0 V$, $I_D = 250 \mu A$	150		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = 250 \mu A$	2.5		5.0 V
I_{GSS}	$V_{GS} = \pm 20 V_{DC}$, $V_{DS} = 0$		± 100	nA
I_{DSS}	$V_{DS} = V_{DSS}$ $V_{GS} = 0 V$	$T_j = 125^\circ C$	25	μA
			250	μA
$R_{DS(on)}$	$V_{GS} = 10 V$, $I_D = 0.5 I_{D25}$ Pulse test, $t \leq 300 \mu s$, duty cycle $d \leq 2 \%$		24	$m\Omega$

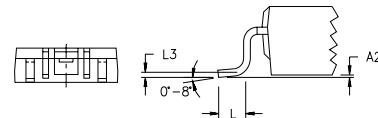
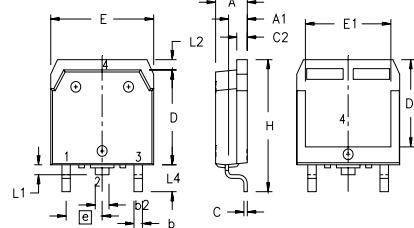
Symbol	Test Conditions	Characteristic Values			
		($T_J = 25^\circ C$, unless otherwise specified)	Min.	Typ.	Max.
g_{fs}	$V_{DS} = 10 V$; $I_D = 0.5 I_{D25}$, pulse test	35	45	S	
C_{iss} C_{oss} C_{rss}	$V_{GS} = 0 V$, $V_{DS} = 25 V$, $f = 1 MHz$	3500	pF		
		1000	pF		
		280	pF		
$t_{d(on)}$ t_r $t_{d(off)}$ t_f	$V_{GS} = 10 V$, $V_{DS} = 0.5 V_{DSS}$, $I_D = 60 A$ $R_G = 4 \Omega$ (External)	30	ns		
		33	ns		
		66	ns		
		18	ns		
$Q_{g(on)}$ Q_{gs} Q_{gd}	$V_{GS} = 10 V$, $V_{DS} = 0.5 V_{DSS}$, $I_D = 0.5 I_{D25}$	110	nC		
		26	nC		
		59	nC		
R_{thJC}			0.31	$^\circ C/W$	
R_{thcs}	(TO-3P)	0.21		$^\circ C/W$	

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
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
φP	.126	.134	3.20	3.40
φP1	.272	.280	6.90	7.10
S	.193	.201	4.90	5.10

Source-Drain Diode
Characteristic Values
($T_J = 25^\circ C$, unless otherwise specified)

Symbol	Test Conditions	Min.	Typ.	Max.
I_s	$V_{GS} = 0 V$		96	A
I_{SM}	Repetitive		250	A
V_{SD}	$I_F = I_s$, $V_{GS} = 0 V$, Pulse test, $t \leq 300 \mu s$, duty cycle $d \leq 2\%$		1.5	V
t_{rr} Q_{RM}	$I_F = 25 A$, $-di/dt = 100 A/\mu s$ $V_R = 100 V$, $V_{GS} = 0 V$	150	ns	
		2.0		μC

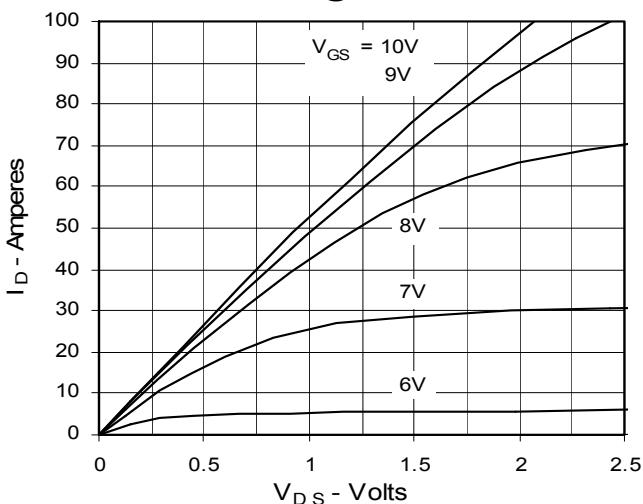
TO-268 (IXTT) Outline


SYM	INCHES		MILLIMETERS	
	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

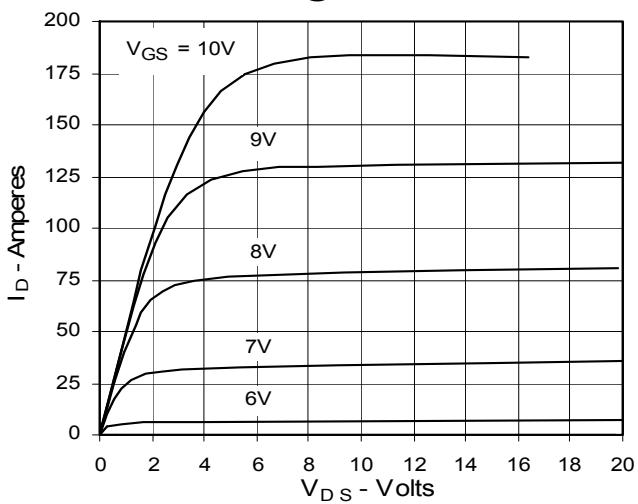
IXYS reserves the right to change limits, test conditions, and dimensions.

IXYS MOSFETs and IGBTs are covered by 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 one or more of the following U.S. patents: 4,850,072 5,017,508 5,063,307 5,381,025 6,259,123 B1 6,534,343 6,710,405B2 6,759,692 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

**Fig. 1. Output Characteristics
@ 25°C**



**Fig. 2. Extended Output Characteristics
@ 25°C**



**Fig. 3. Output Characteristics
@ 150°C**

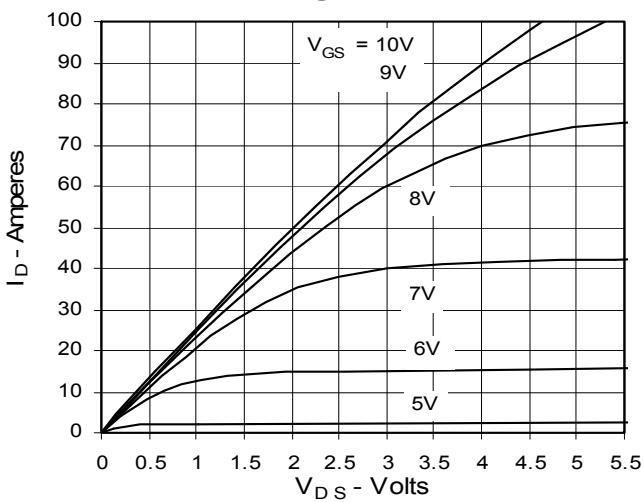
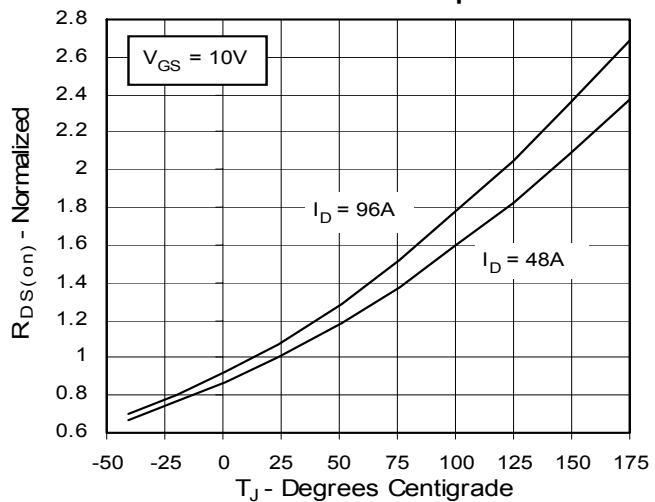


Fig. 4. $R_{DS(on)}$ Normalized to 0.5 I_{D25} Value vs. Junction Temperature



**Fig. 5. $R_{DS(on)}$ Normalized to
0.5 I_{D25} Value vs. I_D**

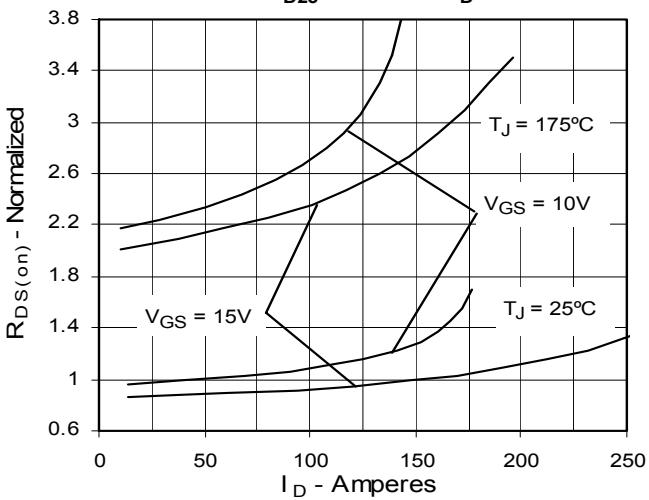


Fig. 6. Drain Current vs. Case Temperature

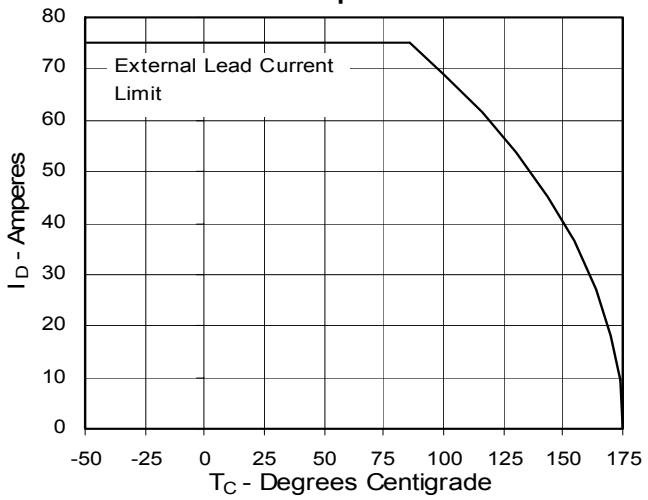


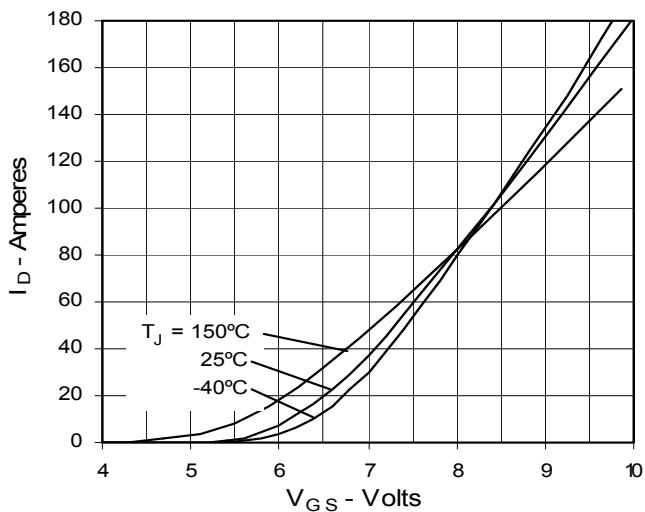
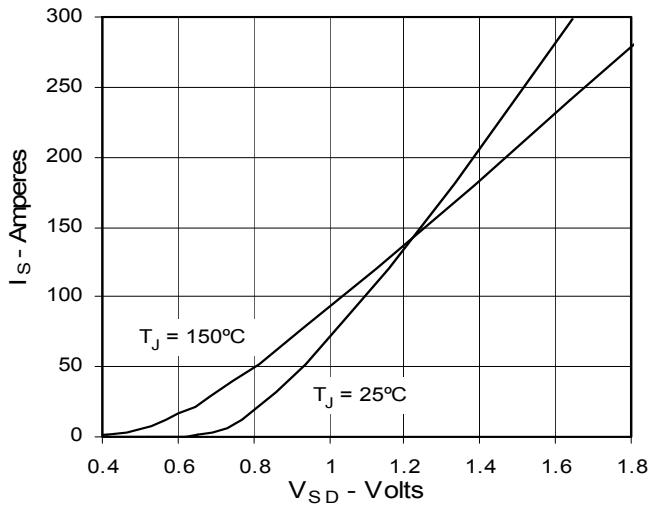
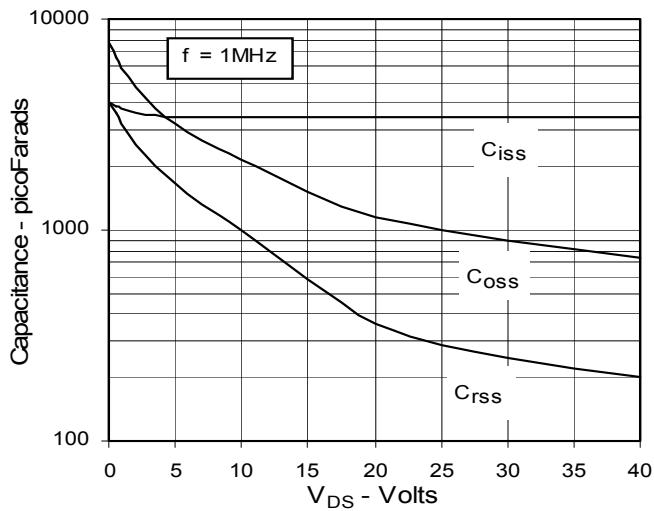
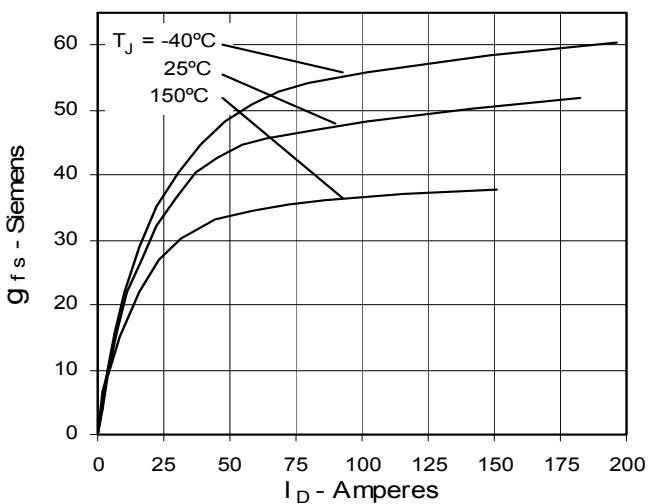
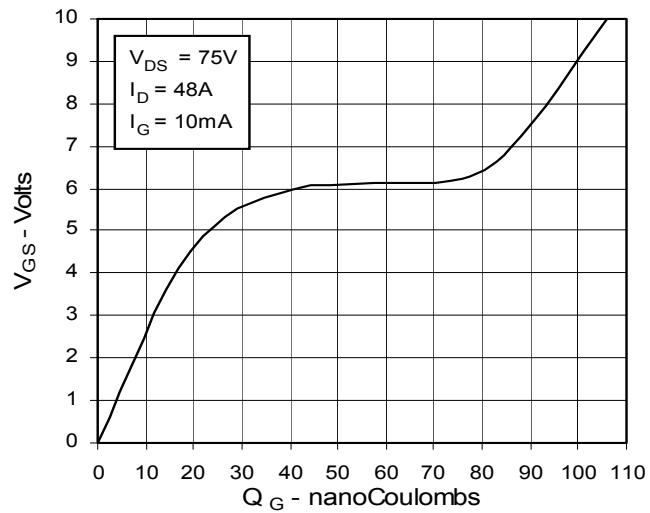
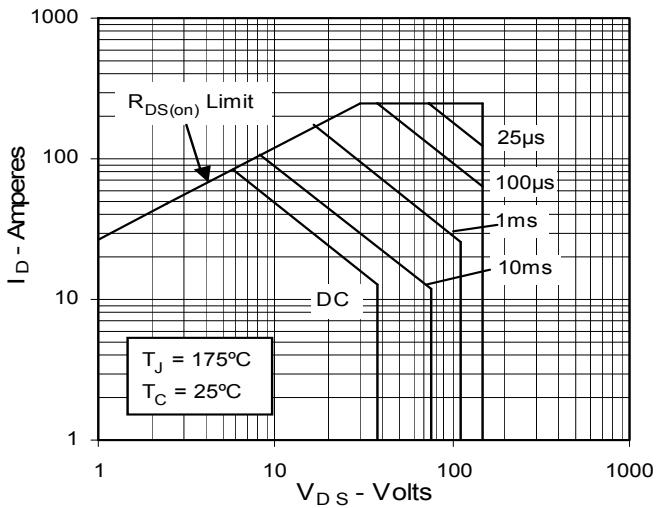
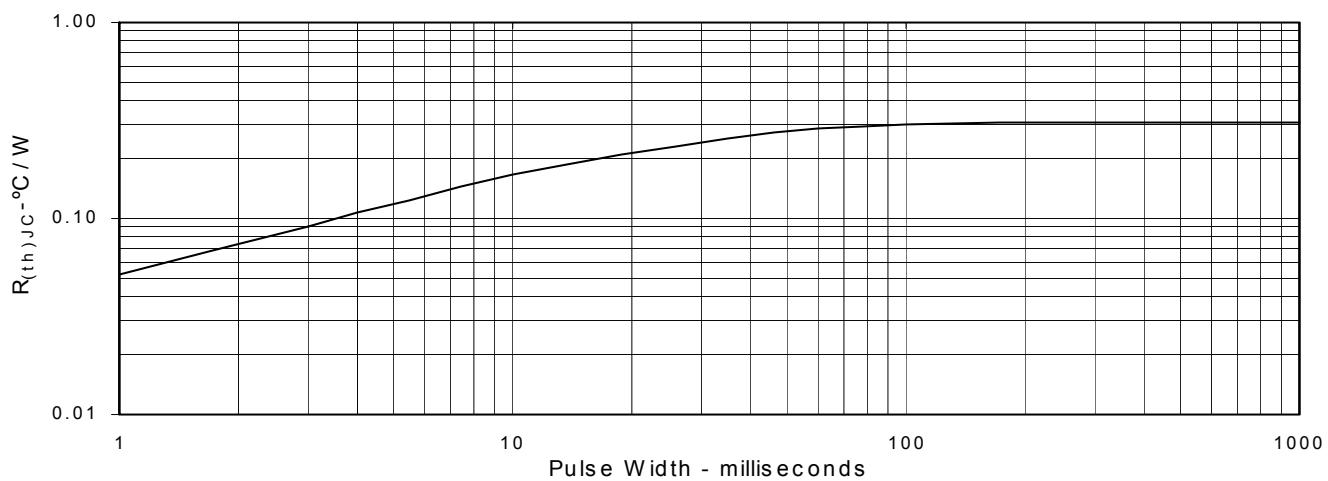
Fig. 7. Input Admittance

**Fig. 9. Source Current vs.
Source-To-Drain Voltage**

Fig. 11. Capacitance

Fig. 8. Transconductance

Fig. 10. Gate Charge

**Fig. 12. Forward-Bias
Safe Operating Area**


Fig. 13. Maximum Transient Thermal Resistance





Disclaimer Notice - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [MOSFET](#) category:

Click to view products by [IXYS](#) manufacturer:

Other Similar products are found below :

[614233C](#) [648584F](#) [IRFD120](#) [JANTX2N5237](#) [FCA20N60_F109](#) [FDZ595PZ](#) [2SK2545\(Q,T\)](#) [405094E](#) [423220D](#) [TPCC8103,L1Q\(CM](#)
[MIC4420CM-TR](#) [VN1206L](#) [614234A](#) [715780A](#) [NTNS3166NZT5G](#) [SSM6J414TU,LF\(T](#) [751625C](#) [BUK954R8-60E](#) [NTE6400](#) [SQJ402EP-](#)
[T1-GE3](#) [2SK2614\(TE16L1,Q\)](#) [2N7002KW-FAI](#) [DMN1017UCP3-7](#) [EFC2J004NUZTDG](#) [ECH8691-TL-W](#) [FCAB21350L1](#) [P85W28HP2F-](#)
[7071](#) [DMN1053UCP4-7](#) [NTE221](#) [NTE222](#) [NTE2384](#) [NTE2903](#) [NTE2941](#) [NTE2945](#) [NTE2946](#) [NTE2960](#) [NTE2967](#) [NTE2969](#) [NTE2976](#)
[NTE6400A](#) [NTE2910](#) [NTE2916](#) [NTE2956](#) [NTE2911](#) [DMN2080UCB4-7](#) [TK10A80W,S4X\(S](#) [SSM6P69NU,LF](#) [DMP22D4UFO-7B](#)
[DMN1006UCA6-7](#) [DMN16M9UCA6-7](#)