
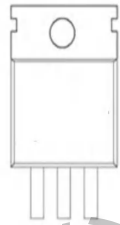
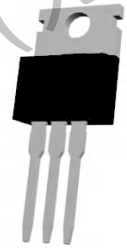
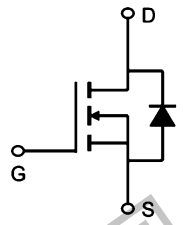


TM100N08P

N-Channel Enhancement Mosfet

<p>General Description</p> <ul style="list-style-type: none"> • Low $R_{DS(ON)}$ • RoHS and Halogen-Free Compliant <p>Applications</p> <ul style="list-style-type: none"> • Load switch • PWM 	<p>General Features</p> <p>$V_{DS} = 80V$ $I_D = 100A$ $R_{DS(ON)} = 6.2m\Omega (typ.) @ V_{GS} = 10V$</p> <p>100% UIS Tested 100% R_{θ} Tested</p> 
--	---

P:TO-220AB

G D S

Absolute Maximum Ratings: ($T_C = 25^\circ C$ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	80	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current- $T_C = 25^\circ C$	100	A
	Continuous Drain Current- $T_C = 100^\circ C$	65	
I_{DM}	Pulsed Drain Current ¹	370	
P_D	Power Dissipation	146	W
E_{AS}	Single pulse avalanche energy ²	625	mJ
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55-+175	$^\circ C$

Thermal Characteristics:

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case	1.02	$^\circ C/W$

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Electrical Characteristics: ($T_C=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\ \mu A$	80	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS}=0V, V_{DS}=80V$	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0A$	---	---	± 100	nA
On Characteristics						
$V_{GS(th)}$	GATE-Source Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\ \mu A$	2	3	4	V
$R_{DS(on)}$	Drain-Source On Resistance ¹	$V_{GS}=10V, I_D=40A$	---	6.2	7.2	m Ω
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{DS}=25V, V_{GS}=0V, f=1MHz$	---	6395	---	pF
C_{oss}	Output Capacitance		---	386	--	
C_{rss}	Reverse Transfer Capacitance		---	255	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	$V_{DS}=30V, I_D=40A,$ $R_{ENG}=2.5\ \Omega, V_{GS}=10V$	---	22	---	ns
t_r	Rise Time		---	50	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	65	---	ns
t_f	Fall Time		---	22	---	ns
Q_g	Total Gate Charge	$V_{GS}=10V, V_{DS}=50V,$ $I_D=40A$	---	116	---	nc
Q_{gs}	Gate-Source Charge		---	27	---	nc
Q_{gd}	Gate-Drain "Miller" Charge		---	39	---	nc
Drain-Source Diode Characteristics						
V_{SD}	Diode Forward Voltage ³	$V_{GS}=0V, I_{SD}=40A$	---	0.89	0.99	V
I_S	Continuous Drain Current	$V_D=V_G=0V$	---	---	100	A
I_{SM}	Pulsed Drain Current		---	---	370	A
T_{rr}	Reverse Recovery Time ³	$I_F=75A, T_J=25^\circ\text{C}$	---	41	---	ns
Q_{rr}	Reverse Recovery Charge ³	$di/dt=100A/us$	---	86	---	nc

Notes :

- 1.Repetitive Rating: Pulse width limited by maximum junction temperature
- 2.EAS condition: $T_J=25^\circ\text{C}, V_{DD}=40V, V_G=10V, R_G=25\Omega$
- 3.Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 1.5\%$, $R_G=25\Omega$, Starting $T_J=25^\circ\text{C}$



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Typical Characteristics

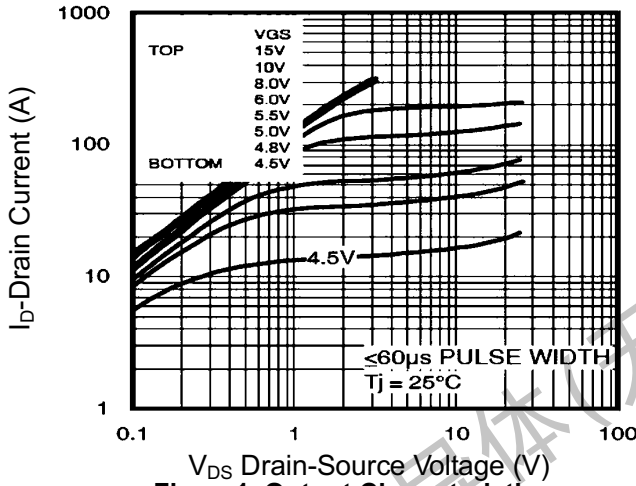


Figure1. Output Characteristics

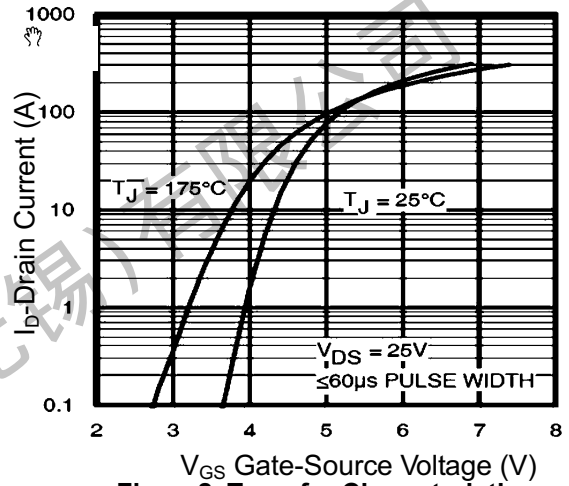


Figure2. Transfer Characteristics

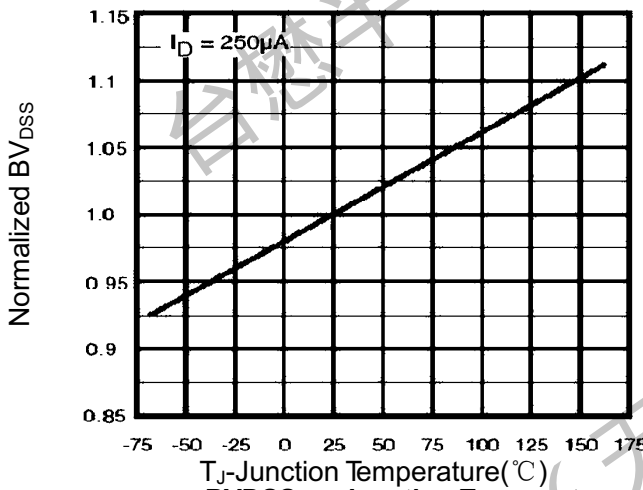


Figure3.

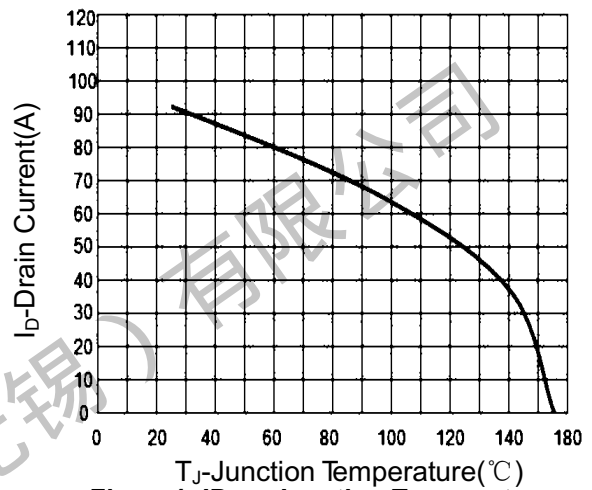


Figure4. ID vs Junction Temperature

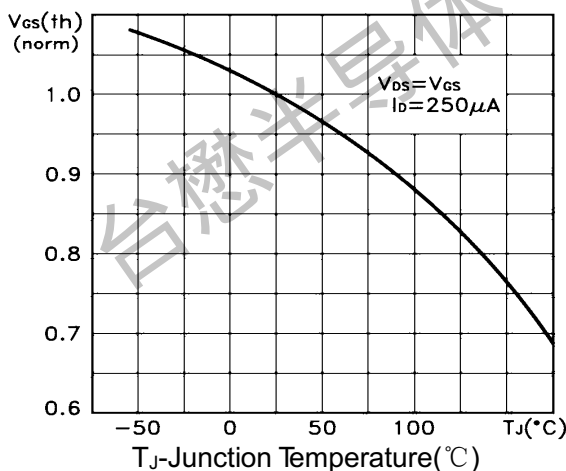


Figure5. VGS(th) vs Junction Temperature

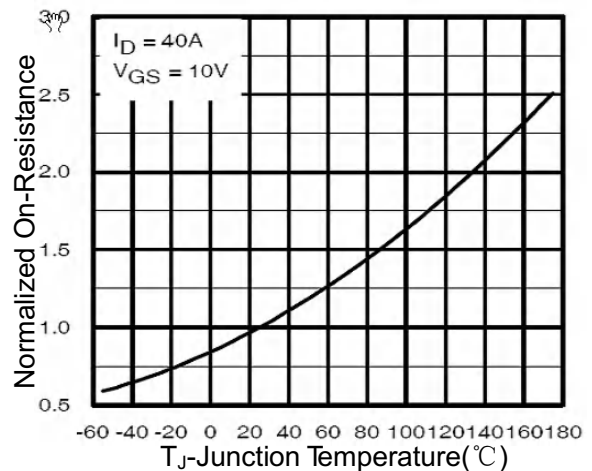
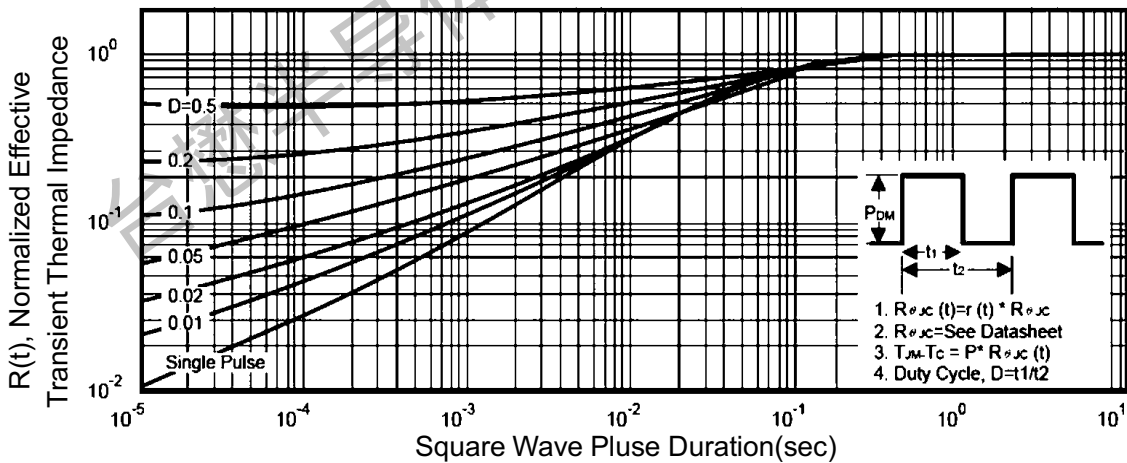
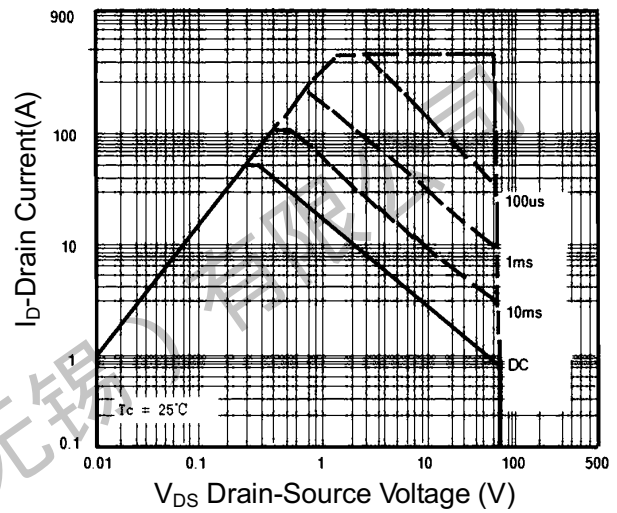
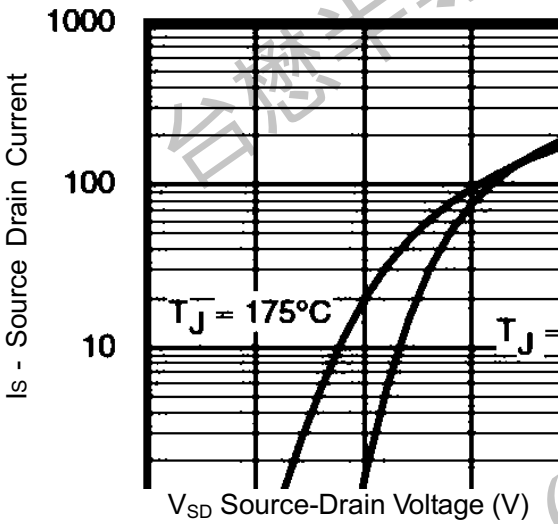
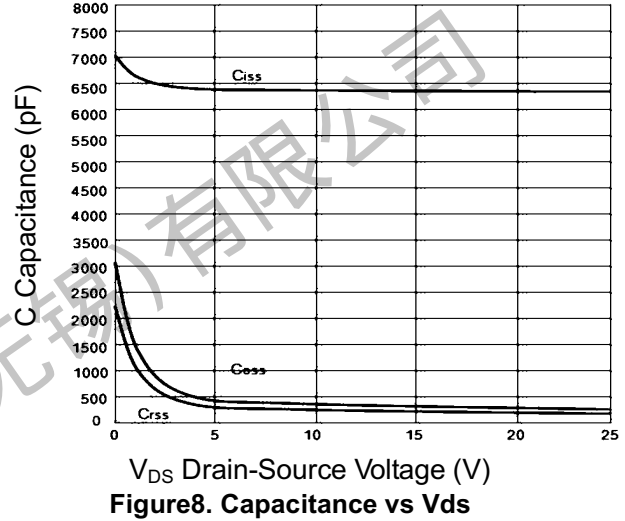
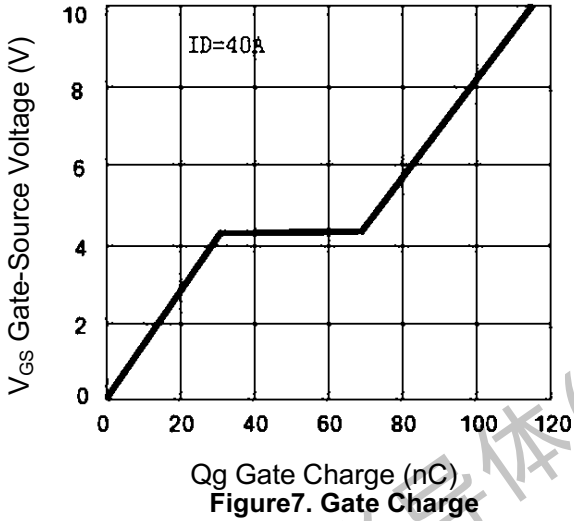


Figure6. Rds(on) Vs Junction Temperature



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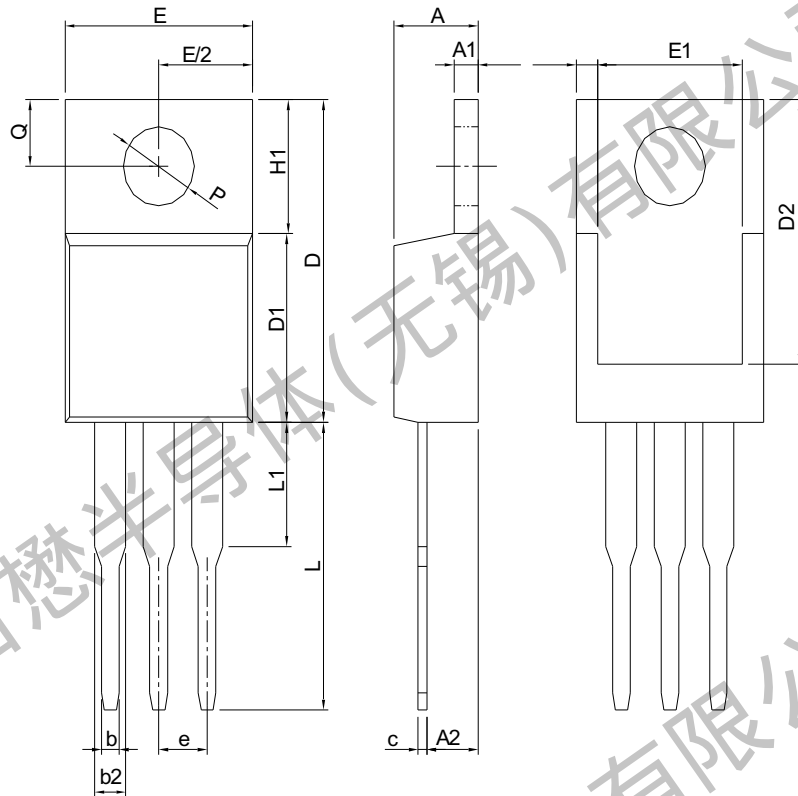
N-Channel Enhancement Mosfet



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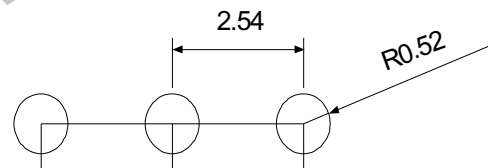
N-Channel Enhancement Mosfet

Package Mechanical Data: TO-220AB



DIMENSIONS	TO-220			
	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	3.56	4.83	0.140	0.190
A1	0.51	1.40	0.020	0.055
A2	2.03	2.92	0.080	0.115
b	0.38	1.02	0.015	0.040
b2	1.14	1.78	0.045	0.070
c	0.36	0.61	0.014	0.024
D	14.22	16.51	0.560	0.650
D1	8.38	9.02	0.330	0.355
D2	12.19	13.65	0.480	0.537
E	9.65	10.67	0.380	0.420
E1	6.86	8.89	0.270	0.350
e	2.54 BSC		0.100 BSC	
H1	5.84	6.86	0.230	0.270
L	12.70	14.73	0.500	0.580
L1	-	6.35	-	0.250
P	3.53	4.09	0.139	0.161
Q	2.54	3.43	0.100	0.135

RECOMMENDED LAND PATTERN



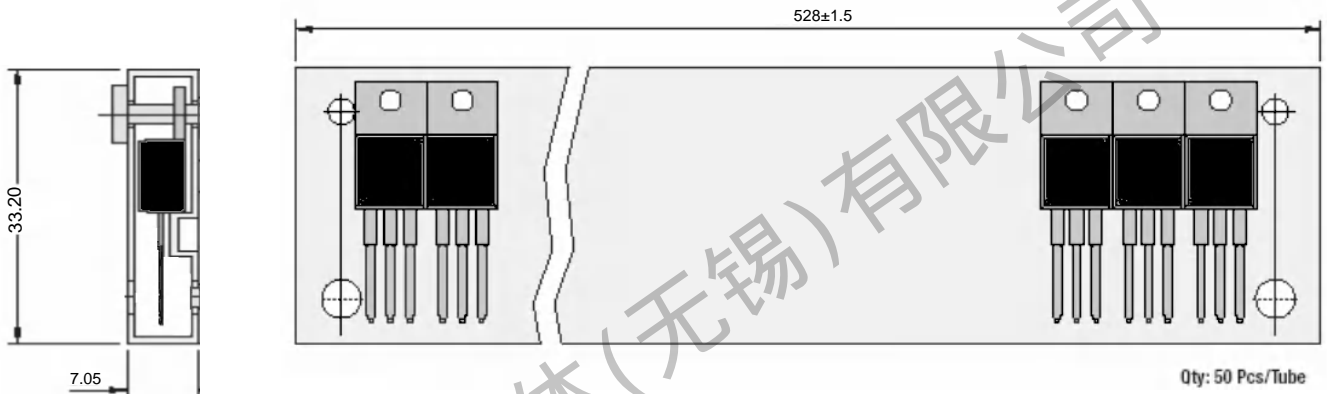
UNIT: mm

Note: Follow JEDEC TO-220 AB.



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N-Channel Enhancement Mosfet



All Dimensions are in mm

1.TO-220AB Packaging

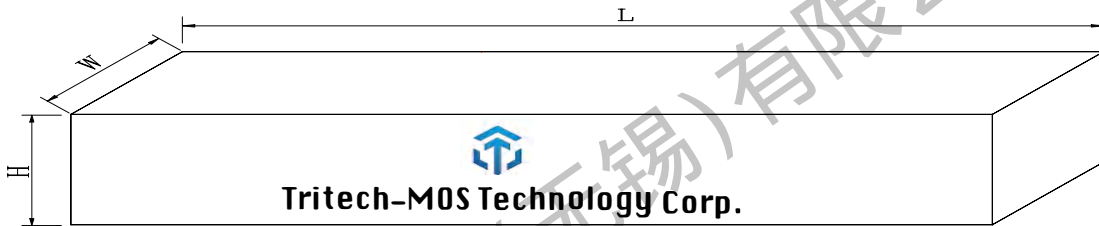
Package	Packing Form	Quantity		
		Tube	Inner Box [kpcs]	Outbox [kpcs]
TO-220AB	Tube Tape	50	5	1



TM100N08P

N-Channel Enhancement Mosfet

Inner Box



Dimension : 580 (L)×154(W) ×49(H) mm

Quantity : 50 ×20Ea = 1Kpcs

Outer Box



Dimension : 595(L)×285(W) ×185(H) mm

Quantity : 1K×5Ea = 5Kpcs

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Revision history:

Date	Rev	Description	Page
2023.09.11	23.09	Original	