TMG80N10D

N-Channel Enhancement Mosfet

General Description

- Low $R_{DS(ON)}$
- RoHS and Halogen-Free Compliant

Applications

- Load switch
- PWM

General Features

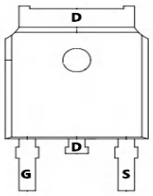
V_{DS} =100V I_D = 80A

$R_{DS(ON)}$= 7.2mΩ(typ.) @ V_{GS}= 10V

100% UIS Tested

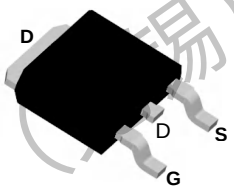
100% R_g Tested

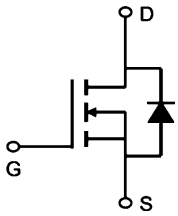
Green Product



Marking G80N10

D:TO-252-3L





Absolute Maximum Ratings (T_C = 25°C Unless Otherwise Noted)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	100	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_C=25°C	Continuous Drain Current, V_{GS} @ 10V	80	A
I_D@T_C=100°C	Continuous Drain Current, V_{GS} @ 10V	56	A
I_{DM}	Pulsed Drain Current	310	A
EAS	Single Pulse Avalanche Energy	132	mJ
P_D@T_C=25°C	Total Power Dissipation	110	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	62	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-Case	---	6.6	°C/W

TMG80N10D

N-Channel Enhancement Mosfet

Electrical Characteristics at Tc=25°C unless otherwise specified

Characteristics	Test Condition	Symbol	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{GS} = 0 V,I_D = 250 μA	BV_{DSS}	100	-	-	V
Drain-Source Leakage Current	V_{DS} = 100 V, V_{GS} = 0 V	I_{DSS}	-	-	1	μA
Gate Leakage Current	V_{GS} = ± 20 V, V_{DS} = 0 V	I_{GSS}	-	-	±100	nA
Gate-Source Threshold Voltage	V_{DS} = V_{GS} , I_D = 250 μA	$V_{GS(th)}$	1	2	3	V
Drain-Source On-State Resistance	VGS=10V, ID=30A	RDS(on)	-	7.2	8.7	mΩ
Forward Transconductance	V_{DS} = 5 V, I_D = 30 A	gfs	-	50	-	S
Input Capacitance	VDS=15V , VGS=0V , f=1MHz	C_{iss}	-	2000	-	pF
Output Capacitance		C_{oss}	-	511	-	pF
Reverse Transfer Capacitance		C_{rss}	-	12	-	pF
Turn-on Delay Time(Note2)	VDD=50V , VGS=10V , RG=3Ω ID=30A	$t_{d(ON)}$	-	17	-	ns
Rise Time(Note2)		t_r	-	20	-	ns
Turn-Off Delay Time(Note2)		$t_{d(OFF)}$	-	60	-	ns
Fall Time(Note2)		t_f	-	18	-	ns
Total Gate Charge(Note2)	VDS=50V , VGS=10V , ID=30A	Q_G	-	10	-	nC
Gate to Source Charge(Note2)		Q_{GS}	-	14	-	nC
Gate to Drain Charge(Note2)		Q_{GD}	-	28	-	nC

Source-Drain Diode Characteristics at Ta=25°C unless otherwise specified

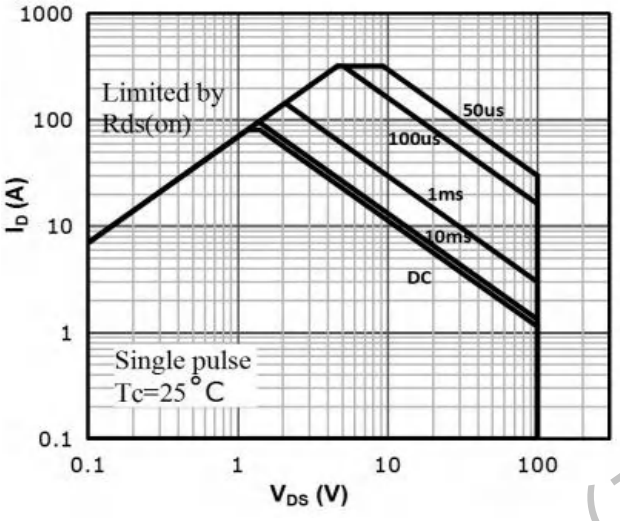
Characteristics	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Maximun Body-Diode Continuous Current		I_S	-	-	80	A
Maximun Body-Diode Pulsed Current(Note2)		I_{SM}	-	-	320	A
Drain-Source Diode Forward Voltage	VGS=0V , IS=30A , TJ=25℃	V_{SD}	-	0.85	-	V

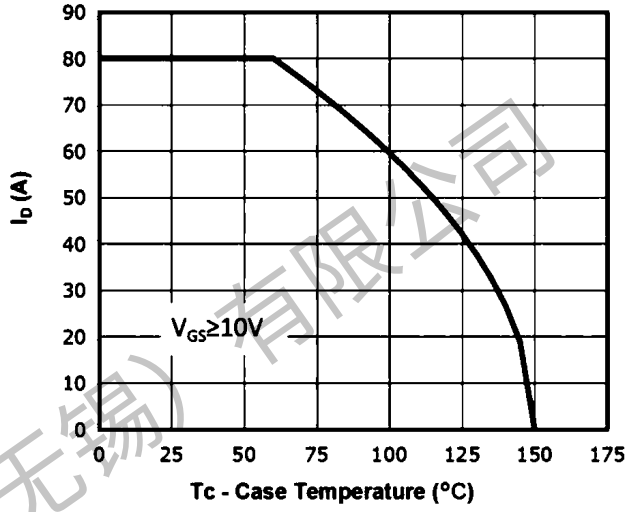
Note2:Pulse test: 300 μs pulse width, 2 % duty cycle

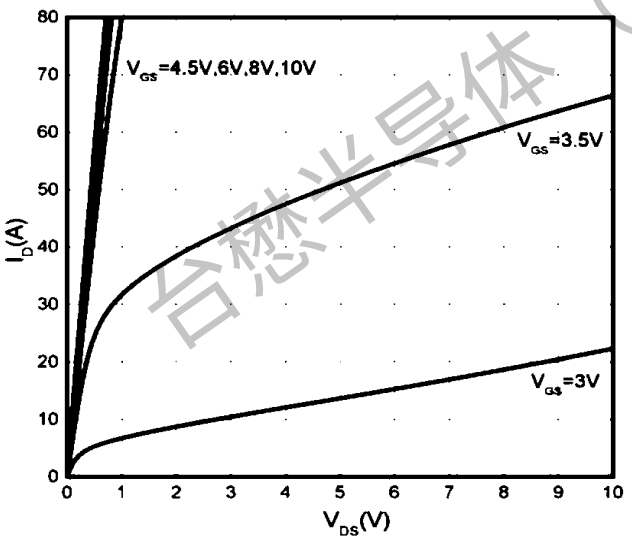
TMG80N10D

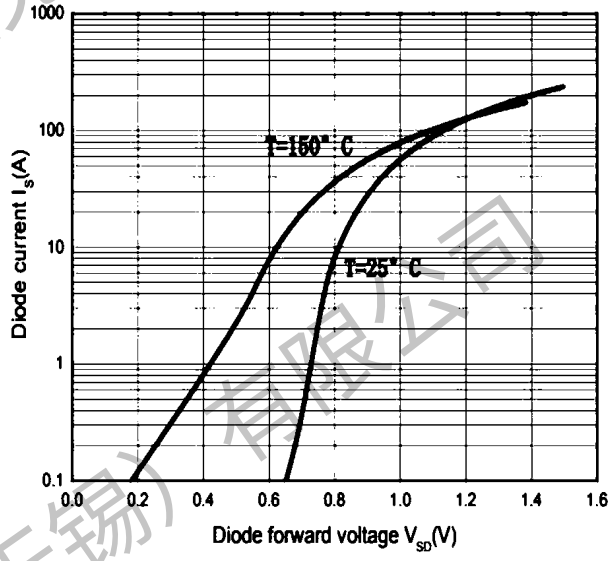
N-Channel Enhancement Mosfet

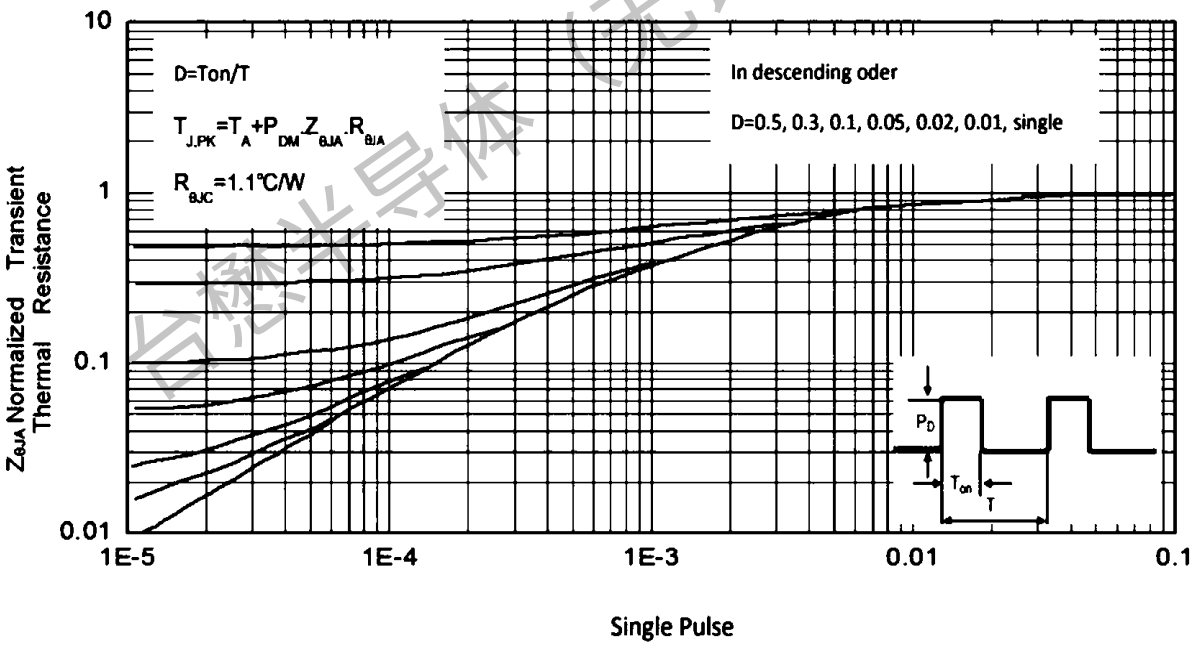
RATINGS AND CHARACTERISTIC CURVES







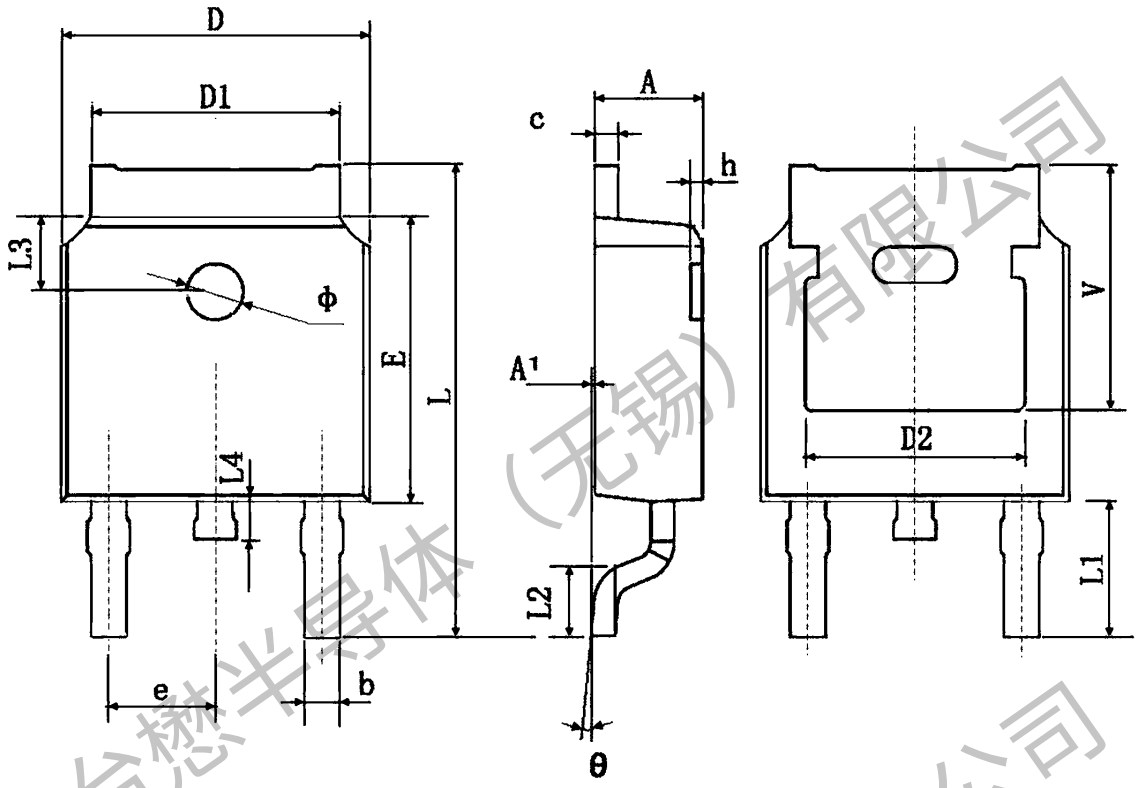




TMG80N10D

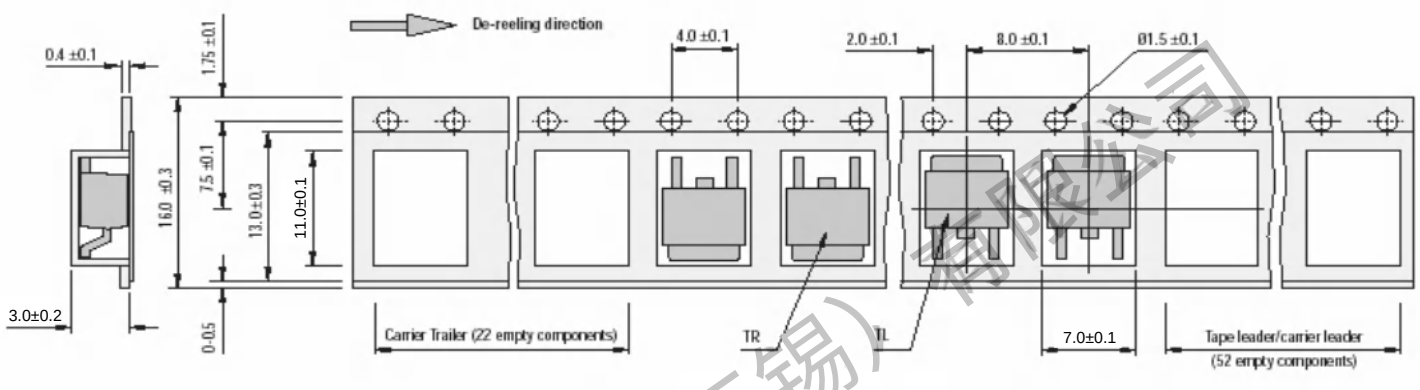
N-Channel Enhancement Mosfet

Package Mechanical Data: TO-252-3L

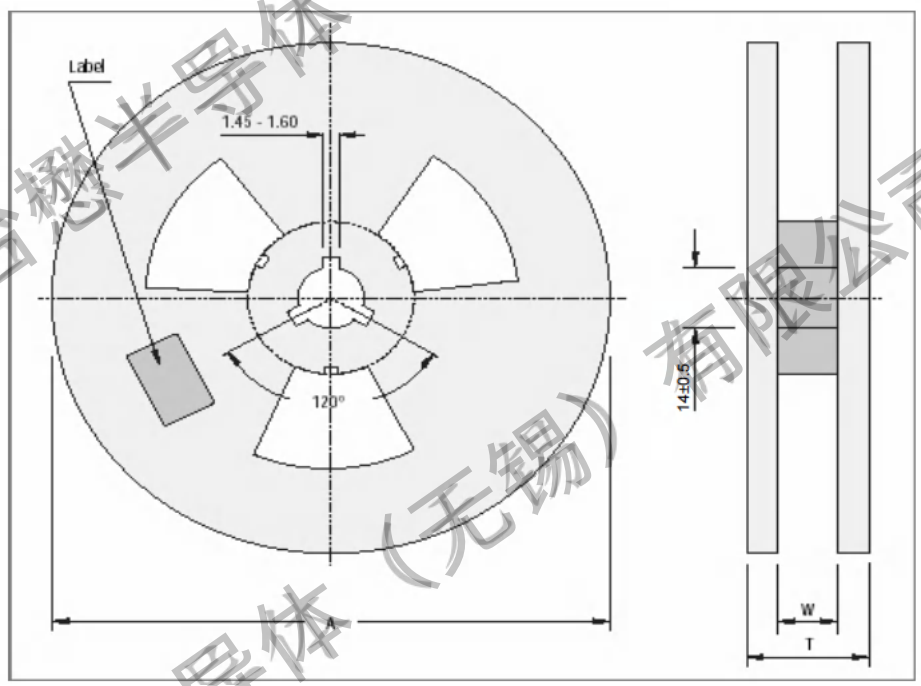


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 TYP.		0.190 TYP.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 TYP.		0.114 TYP.	
L2	1.400	1.700	0.055	0.067
L3	1.600 TYP.		0.063 TYP.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 TYP.		0.211 TYP.	

TO-252-3L Embossed Carrier Tape



TO-252-3L Reel



All Dimensions are in mm

Reel Specifications				
Package	Tape Width	Reel Dia. A - Max	Inside Thickness W	Reel Thickness T - max
TO-252-3L	16	330	18.0 ±1.5	20

Packaging Information

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
2,500 pcs	13 inch	5,000 pcs	355×370×50	25,000 pcs	380×275×380	

Important Notices and Disclaimers

- Tritech-MOS Technology Corp.reserves the right to change thisdocument, its products, and specifications at any time without prior notice.
- Before final design, purchase, or use, customers should obtain and confirm the latest product information and specifications.

- Tritech-MOS Technology Corp. makes no warranties, representations or warranties regarding the suitability of its products for any specific purpose, and Tritech-MOS Technology Corp. does not assume any responsibility for application assistance or customer product design.

- Tritech-MOS Technology Corp. does not guarantee or assume any responsibility for the purchase or use of any unexpected or unauthorized products.
- Any intellectual property rights of Tritech-MOS Technology Corp. are not licensed through implicate or other means.

- Products of Tritech-MOS Technology Corp. are not included as critical components in life support equipment or systems without explicit written approval from Tritech-MOS Technology Corp.

Revision history:

Date	Rev	Description	Page
2023.05.06	23.05	Original	