
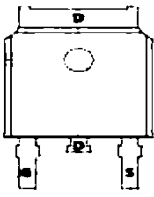
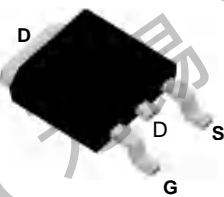
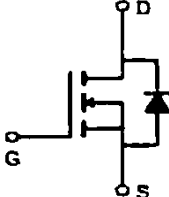


TMG30N15D

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>$V_{DS} = 150V$ $I_D = 30A$</p> <p>$R_{DS(ON)} = 44 m\Omega$ (typ.) @ $V_{GS} = 10V$</p> <p>100% UIS Tested 100% R_g Tested</p> 
--	--

D:TO-252-3L

Marking: G30N15L

Absolute Maximum Ratings ($T_C = 25^\circ C$ Unless Otherwise Noted)

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	150	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D @ T_C = 25^\circ C$	Continuous Drain Current, $V_{GS} @ 10V$	30	A
I_{DM}	Pulsed Drain Current	120	A
EAS	Single Pulse Avalanche Energy	6.3	mJ
$P_D @ T_C = 25^\circ C$	Total Power Dissipation	59.5	W
I_{AS}	Avalanche Current	8.4	A
T_{STG}	Storage Temperature Range	-55 to 175	$^\circ C$
T_J	Operating Junction Temperature Range	-55 to 175	$^\circ C$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient	---	50	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction-Case	---	2.1	$^\circ C/W$



TMG30N15D

N-Channel Enhancement Mosfet

Electrical Characteristics (T_J=25 °C, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	150	---	---	V
ΔBV _{DSS} /ΔT _J	BV _{DSS} Temperature Coefficient	Reference to 25°C, I _D =1mA	---	---	---	V/°C
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =10V, I _D =15A	---	44	55	mΩ
		V _{GS} =4.5V, I _D =12A	---	---	---	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	2.0	2.5	3.0	V
ΔV _{GS(th)}	V _{GS(th)} Temperature Coefficient		---	---	---	mV/°C
I _{DSS}	Drain-Source Leakage Current	V _{DS} =150V, V _{GS} =0V, T _J =25°C	---	---	1	uA
		V _{DS} =150V, V _{GS} =0V, T _J =100°C	---	---	100	
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V, V _{DS} =0V	---	---	±100	nA
g _{fs}	Forward Transconductance	V _{DS} =10V, I _D =15A	---	30	---	S
R _g	Gate Resistance	V _{DS} =0V, V _{GS} =0V, f=1MHz	---	2.2	---	Ω
Q _g	Total Gate Charge	V _{DS} =75V, V _{GS} =10V, I _D =15A	---	9.4	---	nC
Q _{gs}	Gate-Source Charge		---	2.1	---	
Q _{gd}	Gate-Drain Charge		---	1.7	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =75V, I _D =15A, R _G =3Ω, V _{GS} =10V	---	6.3	---	ns
T _r	Rise Time		---	2.2	---	
T _{d(off)}	Turn-Off Delay Time		---	13.7	---	
T _f	Fall Time		---	3.3	---	
C _{iss}	Input Capacitance	V _{DS} =75V, V _{GS} =0V, f=1MHz	---	608	---	pF
C _{oss}	Output Capacitance		---	55	---	
C _{rss}	Reverse Transfer Capacitance		---	3.1	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current ^{1,4}	V _G =V _D =0V, Force Current	---	---	30	A
V _{SD}	Diode Forward Voltage ²	V _{GS} =0V, I _S =15A, T _J =25°C	---	---	1.2	V
t _{rr}	Reverse Recovery Time	I _F =15A, di/dt=100A	---	43	---	nS
Q _{rr}	Reverse Recovery Charge	/ μs, T _J =25°C	---	56	---	nC



TMG30N15D

N-Channel Enhancement Mosfet

Typical Characteristics

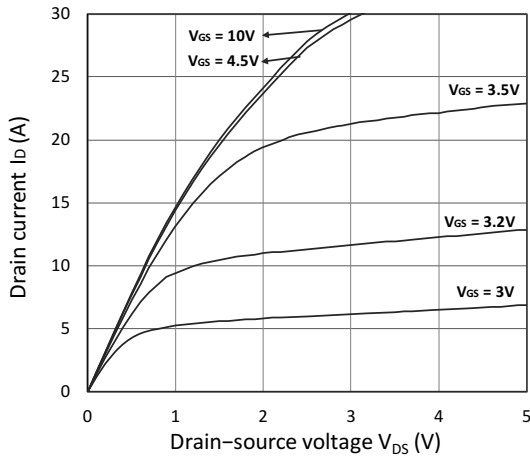


Figure 1. Output Characteristics

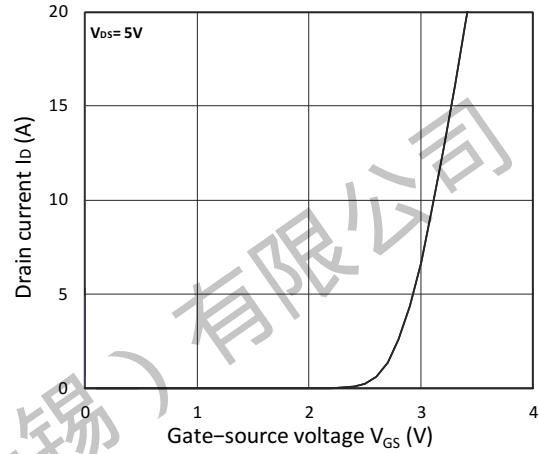


Figure 2. Transfer Characteristics

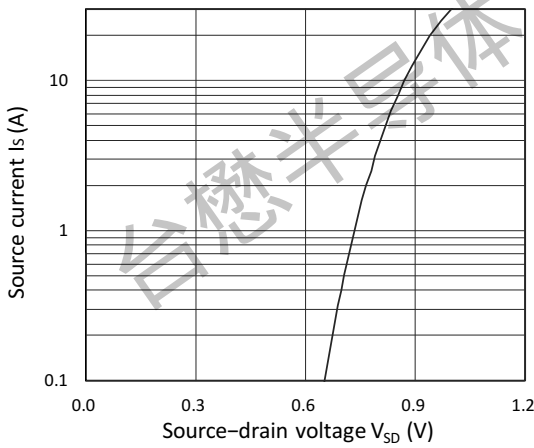


Figure 3. Forward Characteristics of Reverse

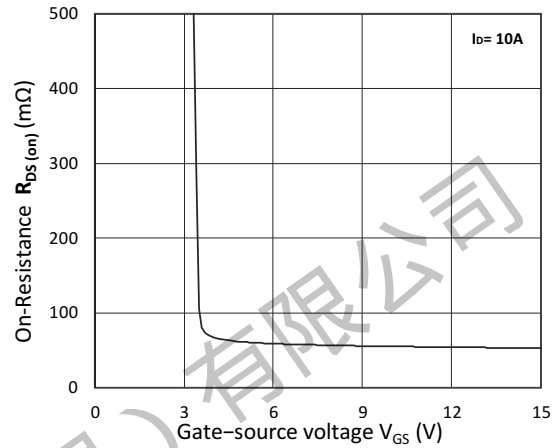


Figure 4. $R_{DS(on)}$ vs. V_{GS}

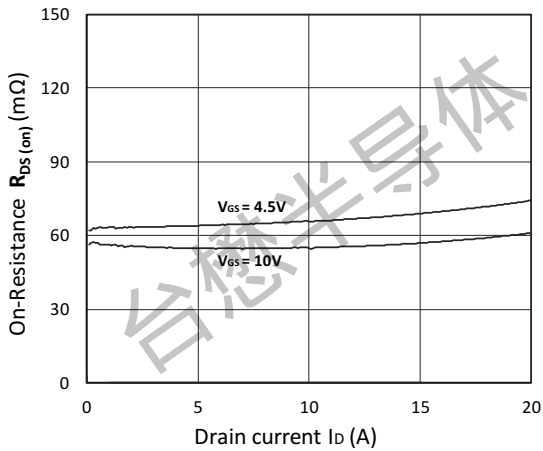


Figure 5. $R_{DS(on)}$ vs. I_D

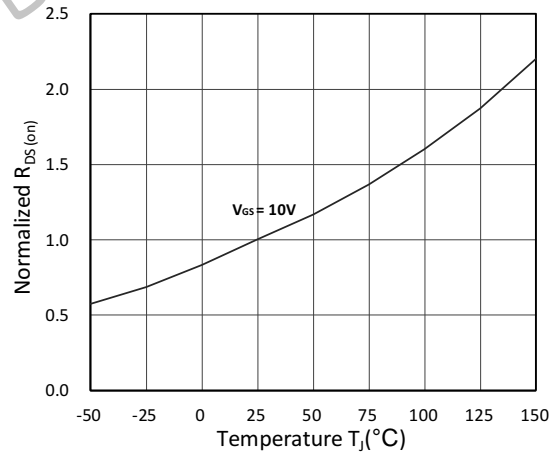


Figure 6. Normalized $R_{DS(on)}$ vs. Temperature



TMG30N15D

N-Channel Enhancement Mosfet

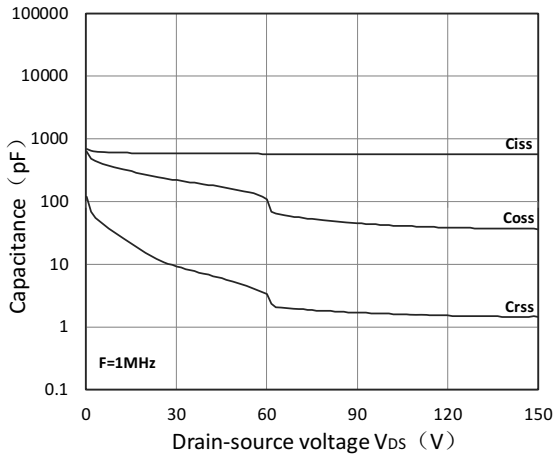


Figure 7. Capacitance Characteristics

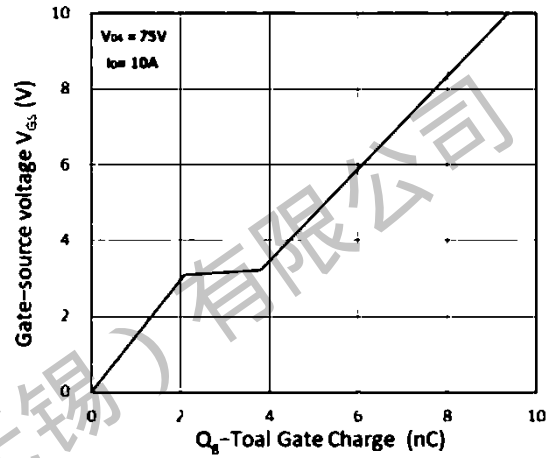


Figure 8. Gate Charge Characteristics

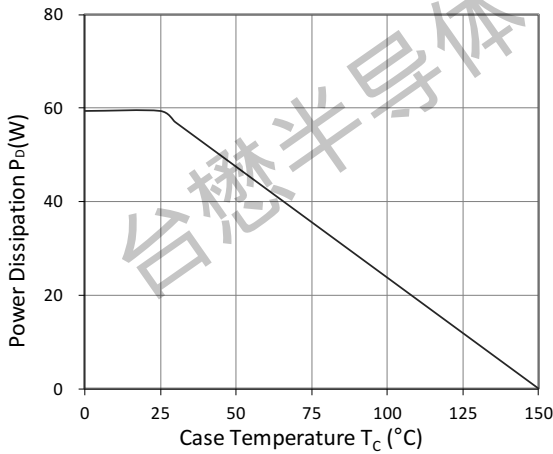


Figure 9. Power Dissipation

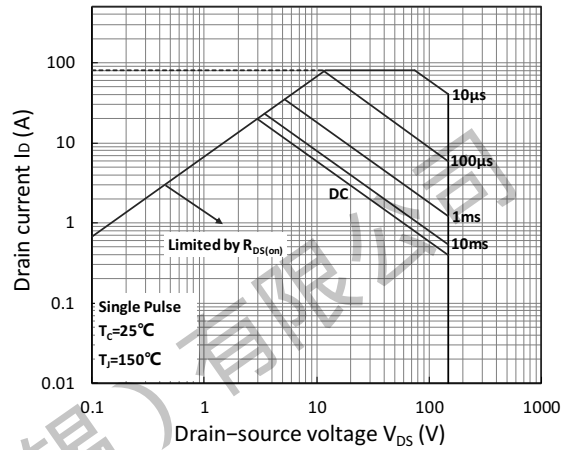


Figure 10. Safe Operating Area

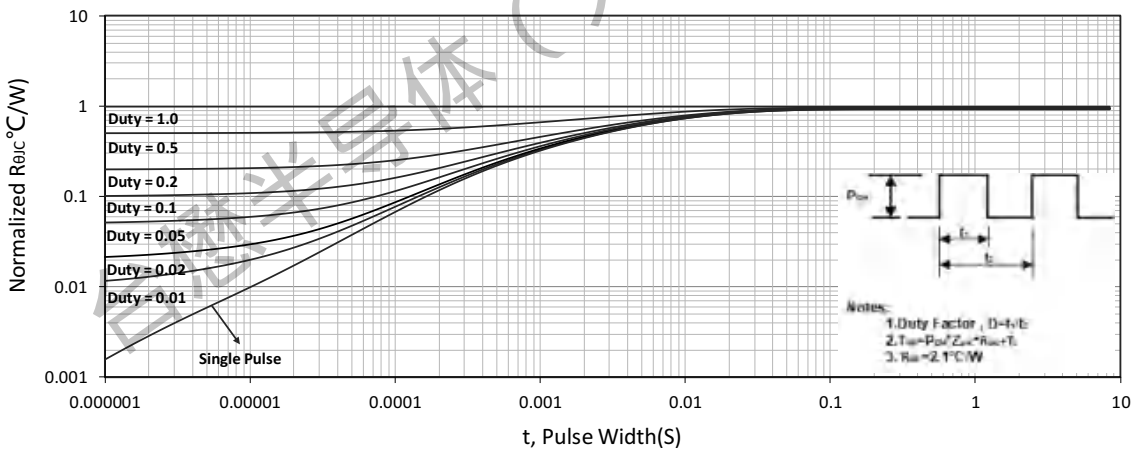


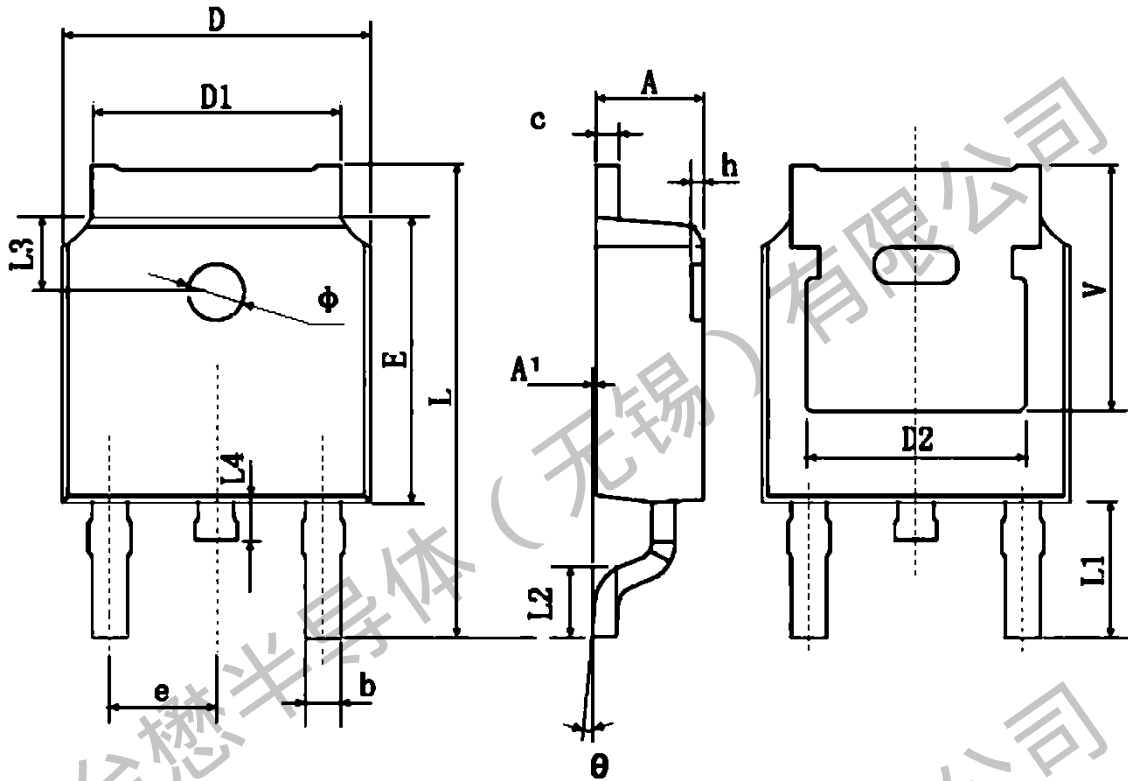
Figure 11. Normalized Maximum Transient Thermal Impedance



TMG30N15D

N-Channel Enhancement Mosfet

Package Mechanical Data: TO-252-3L



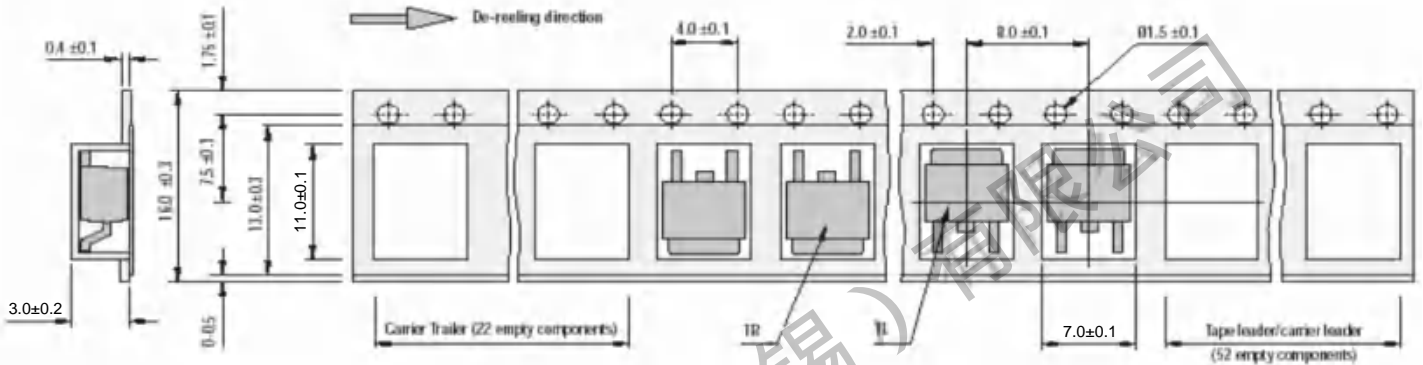
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 TYP.		0.190 TYP.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	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.	



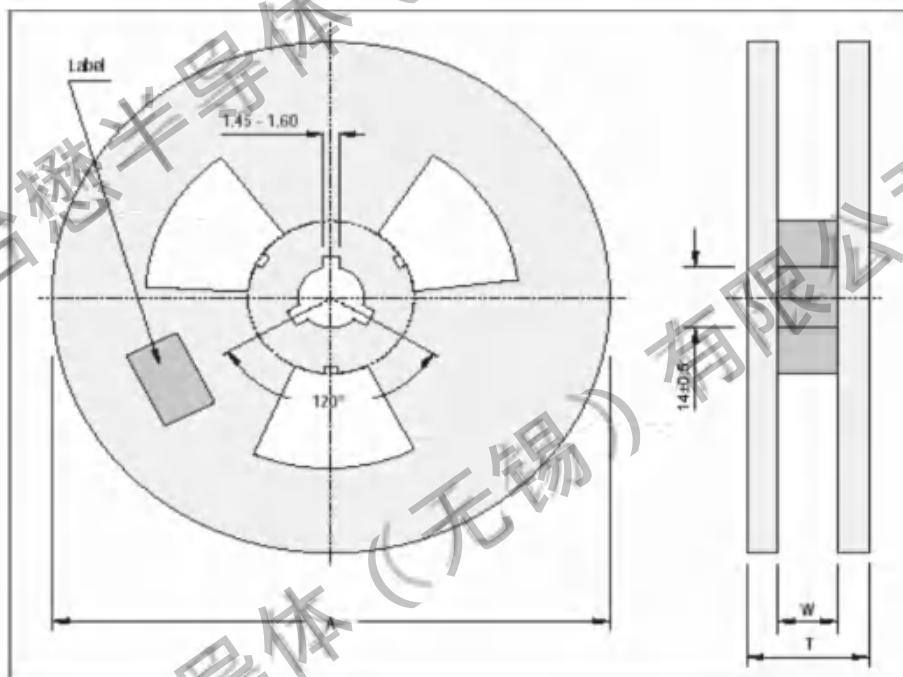
TMG30N15D

N-Channel Enhancement Mosfet

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 this document, 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..5 .05	23.05	Original	