
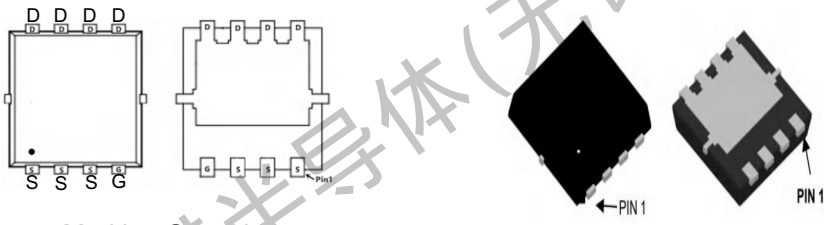


TMG160N06NF

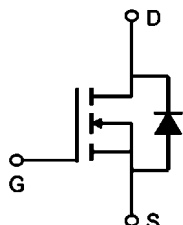
N-Channel Enhancement Mosfet

<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>$V_{DS} = 60V$ $I_D = 160A$</p> <p>$R_{DS(ON)} = 2 m\Omega (typ.) @ V_{GS} = 10V$</p> <p>100% UIS Tested 100% R_g Tested</p> 
--	--

NF:DFN5x6-8L



Marking: G160N06



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

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D @ T_C = 25^\circ C$	Continuous Drain Current, $V_{GS} @ 10V$	160	A
$I_D @ T_C = 100^\circ C$	Continuous Drain Current, $V_{GS} @ 10V$	105	A
I_{DM}	Pulsed Drain Current	960	A
EAS	Single Pulse Avalanche Energy	270	mJ
I_{AS}	Avalanche Current	---	A
$P_D @ T_C = 25^\circ C$	Total Power Dissipation	320	W
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	---	62.5	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction-Case	---	0.39	$^\circ C/W$

TMG160N06NF

N-Channel Enhancement Mosfet

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

Characteristics	Test Condition	Symbo	Min.	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{GS} = 0 V, I _D = 250 μA	BV _{DSS}	60	-	-	V
Drain-Source Leakage Current	V _{DS} = 60V, 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	V _{GS} = 10 V, I _D =30A	R _{DS(on)}	-	2	2.6	mΩ
	V _{GS} = 4.5 V, I _D =20A		-	2.6	3.4	mΩ
Input Capacitance	V _{GS} = 0 V, V _{DS} = 25 V, f =500KHz	C _{iss}	-	5460	-	pF
Output Capacitance		C _{oss}	-	1290	-	pF
Reverse Transfer Capacitance		C _{rss}	-	13	-	pF
Turn-on Delay Time		t _{d(ON)}	-	20	-	ns
Rise Time	VDS=30V, ID=60A VGS=10V, RG=4.7Ω	t _r	-	127	-	ns
Turn-Off Delay Time		t _{d(OFF)}	-	95	-	ns
Fall Time		t _f	-	25	-	ns
Total Gate Charge		Q _G	-	86	-	nC
Gate to Source Charge	VDS=30V, ID=30A, VGS=10V	Q _{GS}	-	14	-	nC
Gate to Drain Charge		Q _{GD}	-	14	-	nC

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

Characteristics	Test Condition	Symbo	Min.	Typ.	Max.	Unit
Maximun Body-Diode Continuous Current		I _S	-	-	160	A
Maximun Body-Diode Pulsed Current		I _{SM}	-	-	960	A
Drain-Source Diode Forward Voltage	VGS=0V, IS=30A, T _J =25°C	V _{SD}	-	-	1.4	V
Reverse Recovery Time	I _S = I _F , ISD=30A, V _{GS} = 0 V, dI / dt = 100 A/μs (Note3)	t _{rr}	-	63	-	ns
Reverse Recovery Charge		Q _{rr}	-	59	-	nC

TMG160N06NF

N-Channel Enhancement Mosfet

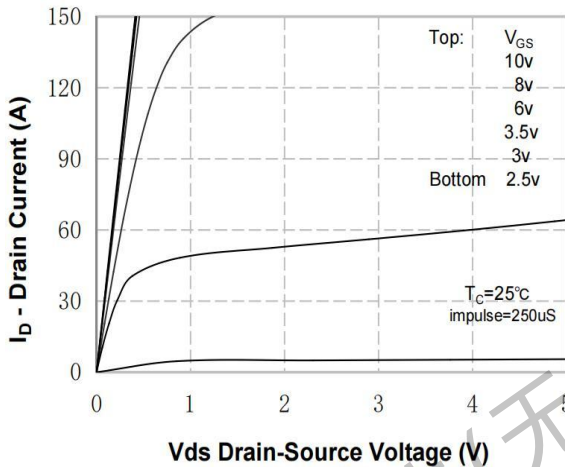


Figure 1. On-Region Characteristics

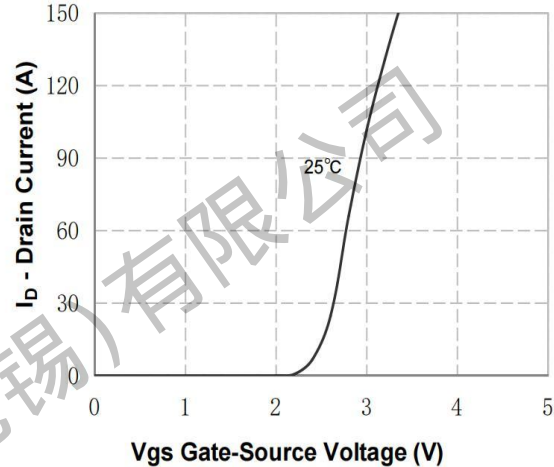


Figure 2. Transfer Characteristics

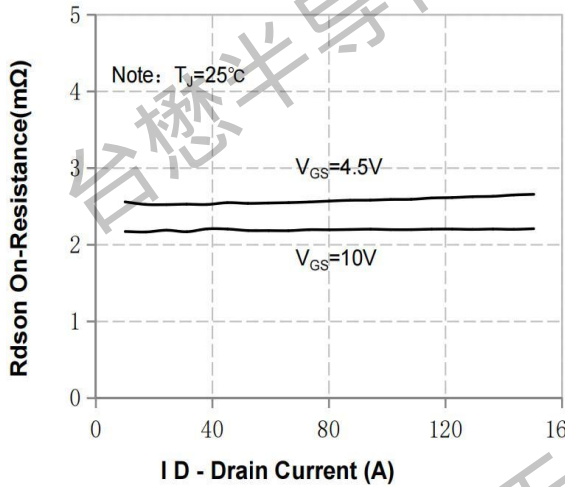


Figure 3. On-Resistance Variation vs Drain Current and Gate Voltage

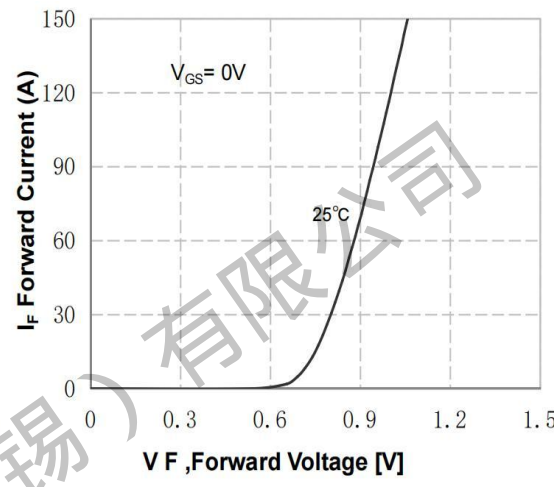


Figure 4. Body Diode Forward Voltage Variation with Source Current

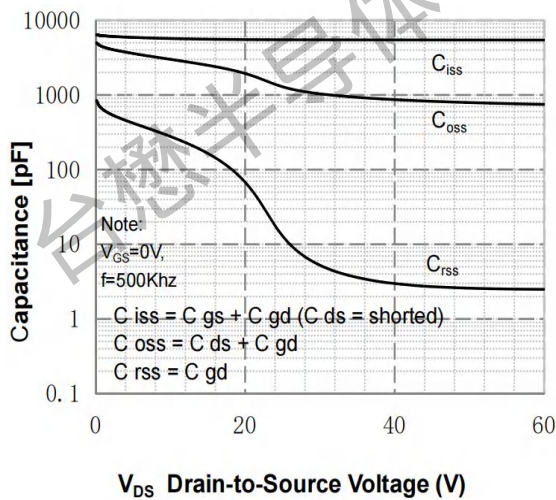


Figure 5. Capacitance Characteristics

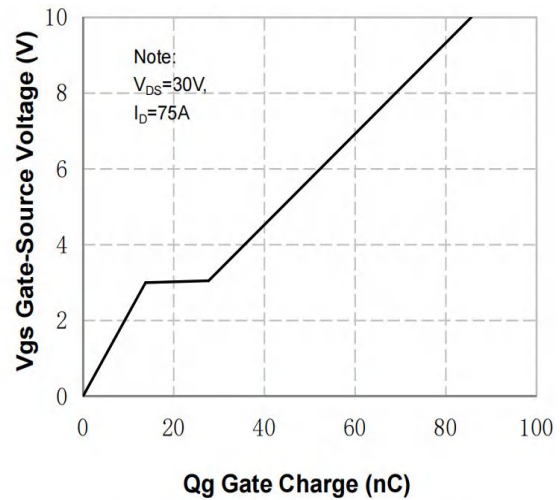


Figure 6. Gate Charge Characteristics



TMG160N06NF

N-Channel Enhancement Mosfet

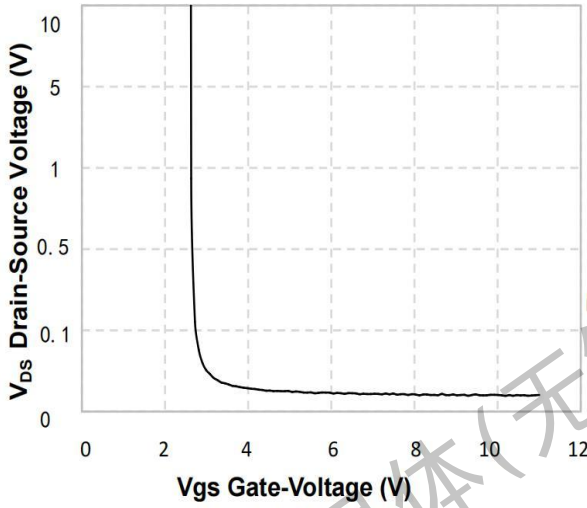


Figure 7. V_{DS} Drain-Source Voltage vs Gate Voltage

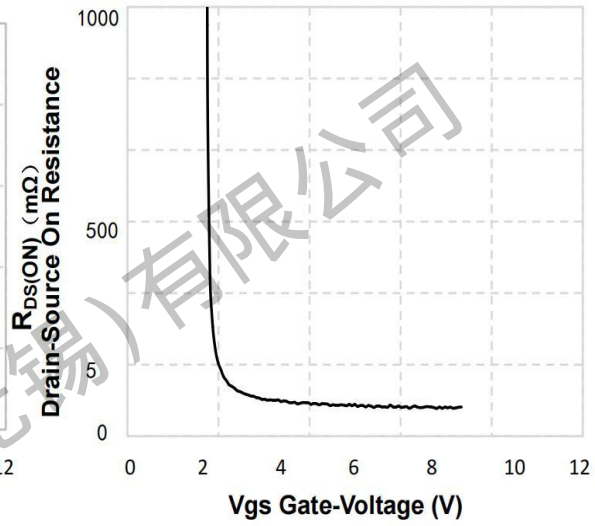


Figure 8. On-Resistance vs Gate Voltage

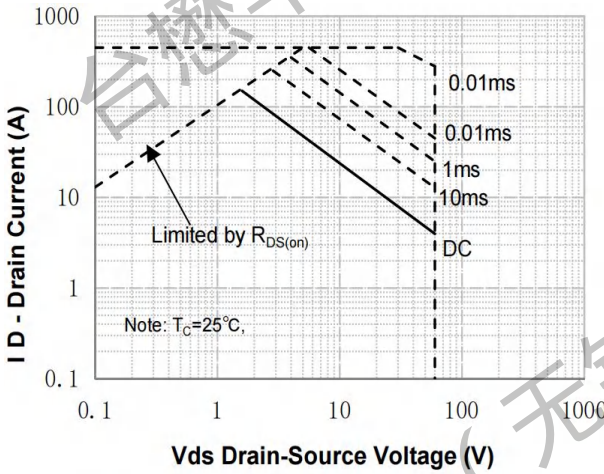


Figure 9. Maximum Safe Operating Area

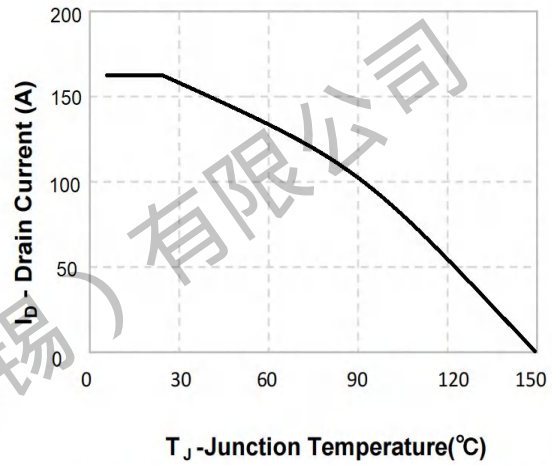


Figure 10. Maximum Continuous Drain Current vs Temperature

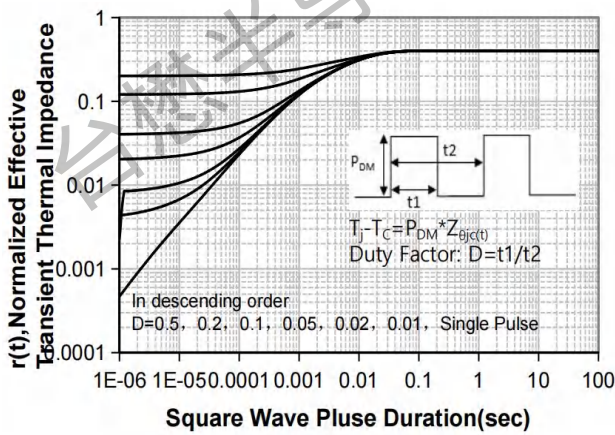
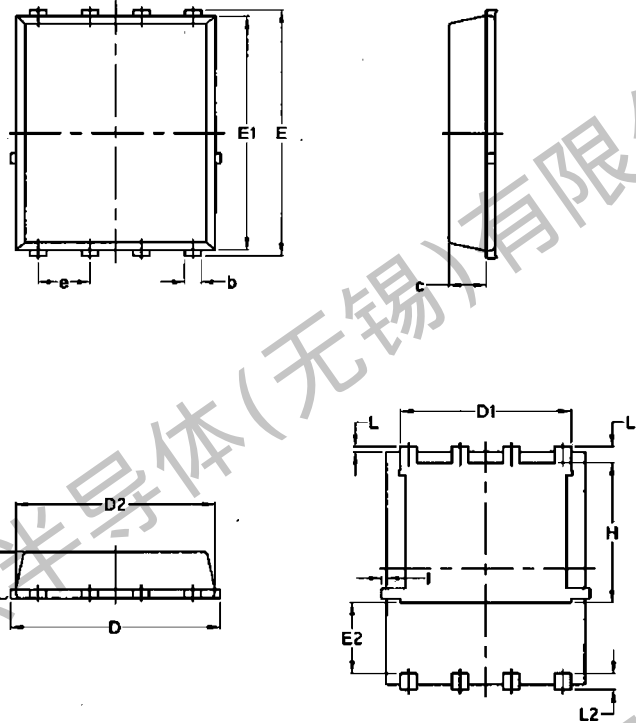


Figure 11. Transient Thermal Response Curve

TMG160N06NF

N-Channel Enhancement Mosfet

Package Mechanical Data:DFN5x6-8L

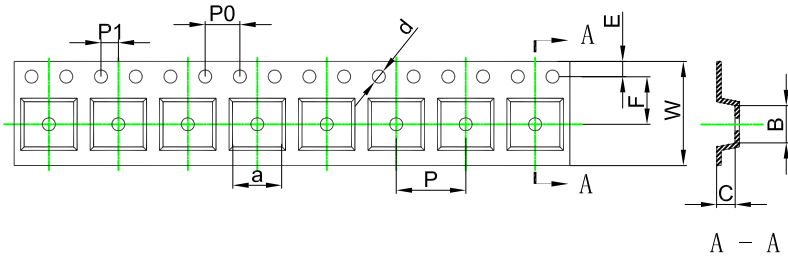


Symbol	Common			
	mm		Inch	
	Min	Max	Min	Max
A	1.03	1.17	0.0406	0.0461
b	0.34	0.48	0.0134	0.0189
c	0.824	0.0970	0.0324	0.082
D	4.80	5.40	0.1890	0.2126
D1	4.11	4.31	0.1618	0.1697
D2	4.80	5.00	0.1890	0.1969
E	5.95	6.15	0.2343	0.2421
E1	5.65	5.85	0.2224	0.2303
E2	1.60	/	0.0630	/
e	1.27 BSC		0.05 BSC	
L	0.05	0.25	0.0020	0.0098
L1	0.38	0.50	0.0150	0.0197
L2	0.38	0.50	0.0150	0.0197
H	3.30	3.50	0.1299	0.1378
I	/	0.18	/	0.0070

TMG160N06NF

N-Channel Enhancement Mosfet

PDFN5x6-8L Embossed Carrier Tape



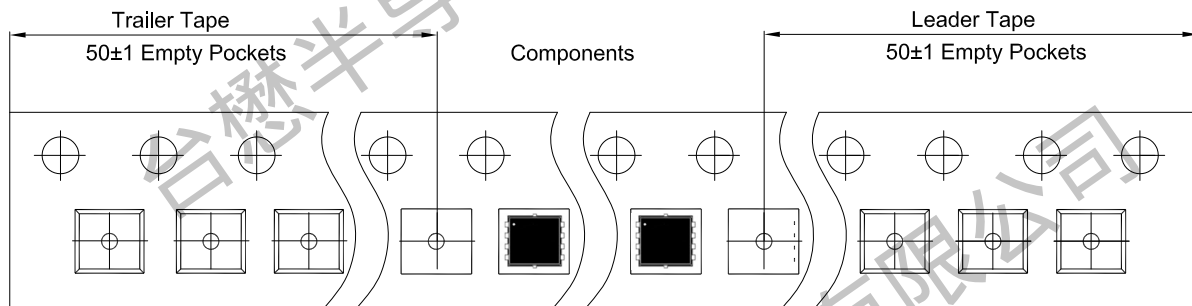
Packaging Description:

SOP-8L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 2,500 units per 13" or 33cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

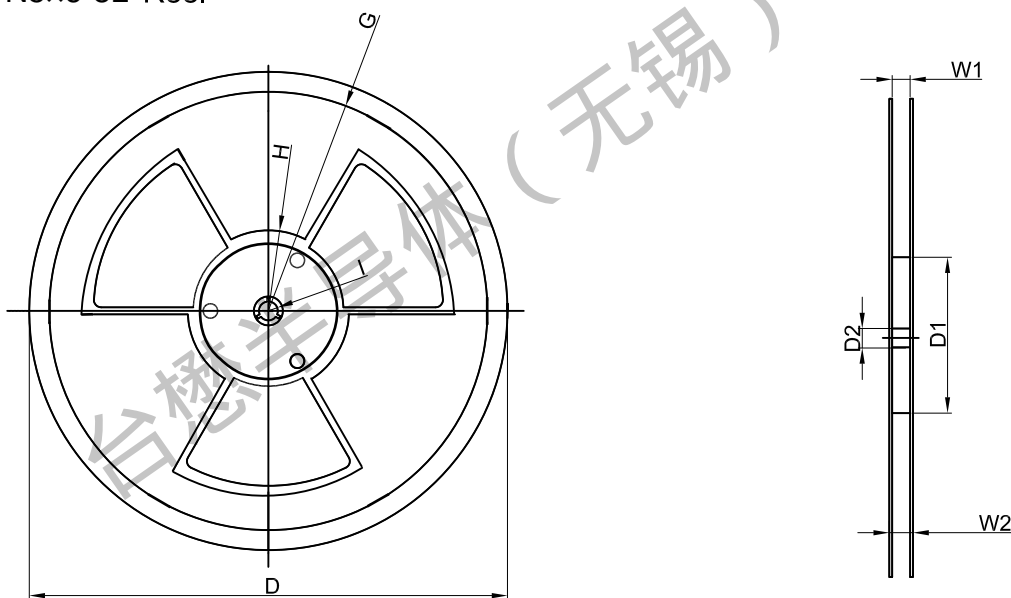
ALL DIM IN mm

Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
PDFN5x6-8L	6.40	5.40	2.10	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

PDFN5x6-8L Tape Leader and Trailer



PDFN5x6-8L Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
13"Dia	Ø330.00	100.00	13.00	R135.00	R55.00	R6.50	12.00	14.00

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
5,000 pcs	13 inch	10,000 pcs	370×355×52	50,000 pcs	400×360×368	



TMG160N06NF

N-Channel Enhancement Mosfet

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
2024.05.14	24.05	Original	