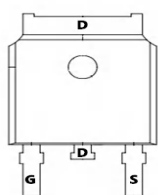


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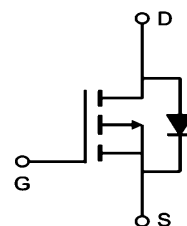
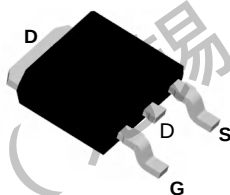
P-Channel Enhancement Mosfet

General Description • Low $R_{DS(ON)}$ • RoHS and Halogen-Free Compliant Applications • Load switch • PWM	General Features $V_{DS} = -60V$ $I_D = -80A$ $R_{DS(ON)} = 12m\Omega$ (typ.) @ $V_{GS} = -10V$ 100% UIS Tested 100% R_g Tested 
--	--

D:TO-252-3L



Marking: 80P06



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, $V_{GS} @ -10V$	-80	A
$I_D @ T_C = 100^\circ C$	Continuous Drain Current, $V_{GS} @ -10V$	-52	A
I_{DM}	Pulsed Drain Current	-290	A
EAS	Single Pulse Avalanche Energy	484	mJ
P_D	Total Power Dissipation	107	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	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction-Case	---	6.6	$^\circ C/W$



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P-Channel Enhancement Mosfet

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

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV _{DSS}	Drain-Sourtce Breakdown Voltage	V _{GS} =0V, I _D =250 μ A	-60	---	---	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} =0V, V _{DS} =-60V	---	---	-1	μ A
I _{GSS}	Gate-Source Leakage Current	V _{GS} =± 20V, V _{DS} =0A	---	---	± 100	nA
On Characteristjcs						
V _{GS(th)}	GATE-Source Threshold Voltage	V _{GS} =V _{DS} , I _D =250 μ A	-1	-2	-3	V
R _{DS(ON)}	Drain-Source On Resistance	V _{GS} =-10V, I _D =-20A	---	12	14	m Ω
		V _{GS} =-4.5V, I _D =-15A	---	15	18.6	m Ω
Dynamic Characteristjcs						
C _{iss}	Input Capacitance	V _{DS} =-25V, V _{GS} =0V, f=1MHz	---	5669	---	pF
C _{oss}	Output Capacitance		---	289	--	
C _{rss}	Reverse Transfer Capacitance		---	209	---	
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time	V _{DS} =-30V, R _{ENG} =3 Ω , V _{GS} =-10V	---	25	---	ns
t _r	Rise Time		---	20	---	ns
t _{d(off)}	Turn-Off Delay Time		---	137	---	ns
t _f	Fall Time		---	29	---	ns
Q _g	Total Gate Charge	V _{GS} =-10V, V _{DS} =-30V, I _D =-20A	---	139	---	nc
Q _{GS}	Gate-Source Charge		---	18	---	nc
Q _{gd}	Gate-Drain “Miller” Charge		---	27	---	nc
Drain-Source Diode Characteristics						
V _{SD}	Diode Forward Voltage ³	V _{GS} =0V, I _{SD} =-20A	---	---	1.2	V
I _S	Continuous Drain Curren	VD=VG=0V	---	---	-80	A
I _{SM}	Pulsed Drain Current		---	---	-240	A
T _{rr}	Reverse Recovery Time	I _F =20A, T _J =25 °C	---	56	---	ns
Q _{rr}	Reverse Recovery Charge	dI/dt=100A/us	---	63	---	nc

Typical Characteristics

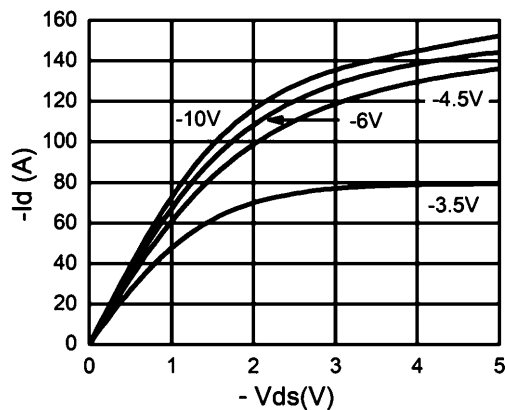


Figure 1. Output Characteristics

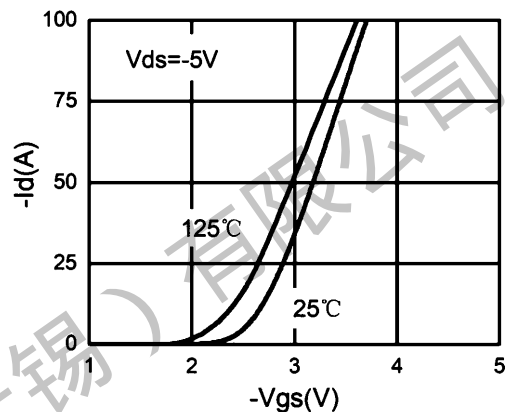


Figure 2. Transfer Characteristics

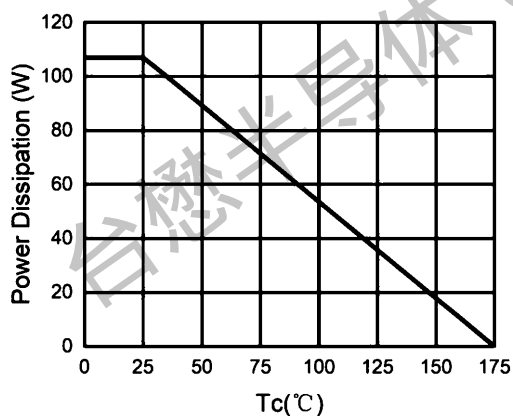


Figure 3. Power Dissipation

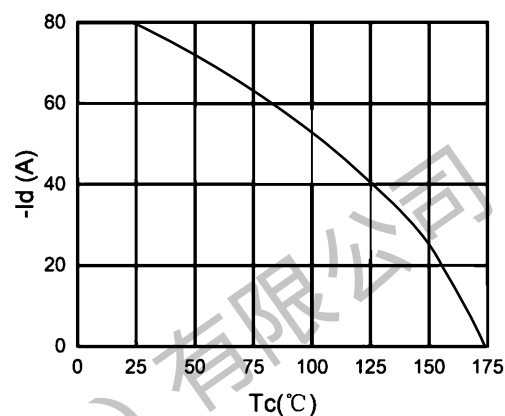


Figure 4. Drain Current

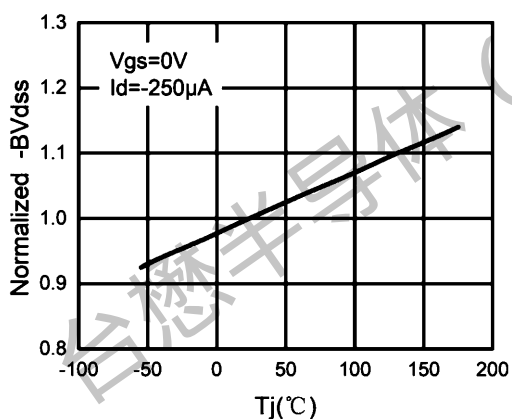


Figure 5. BV_{DSS} vs Junction Temperature

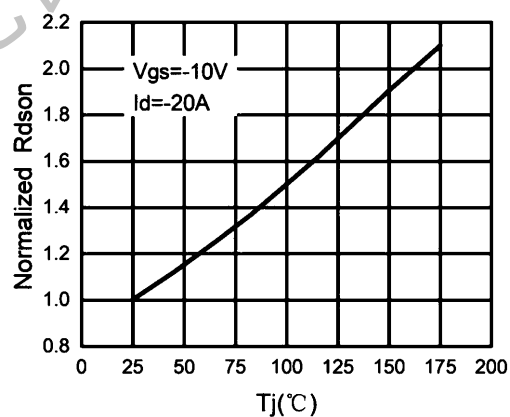


Figure 6. $R_{DS(ON)}$ vs Junction Temperature

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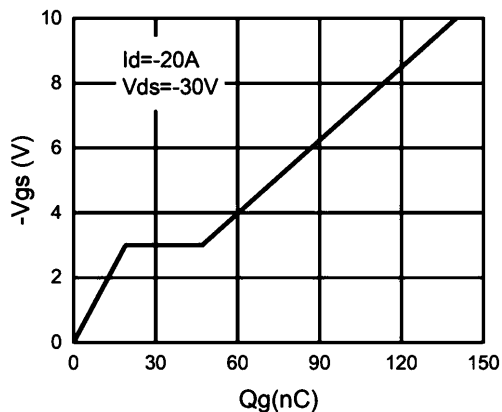


Figure 7. Gate Charge Waveforms

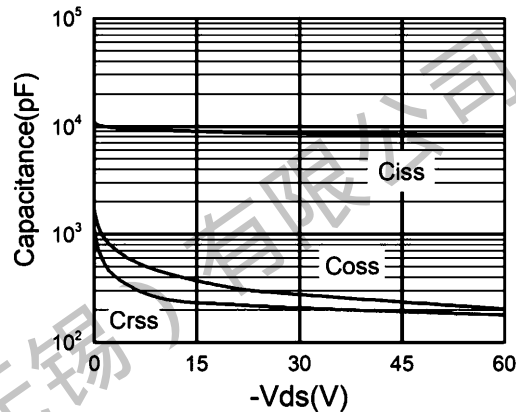


Figure 8. Capacitance

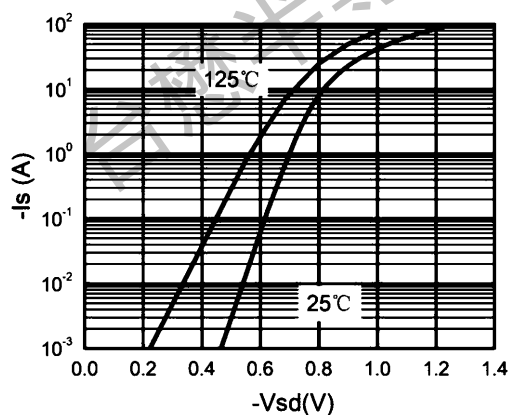


Figure 9. Body-Diode Characteristics

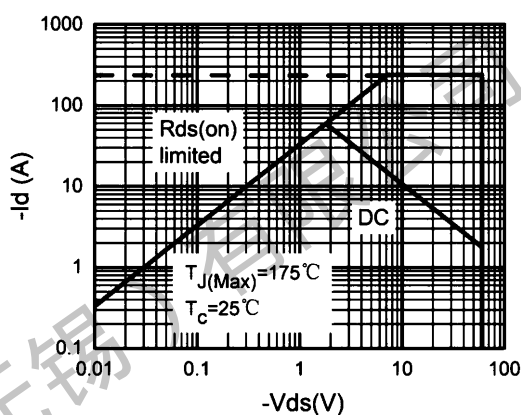
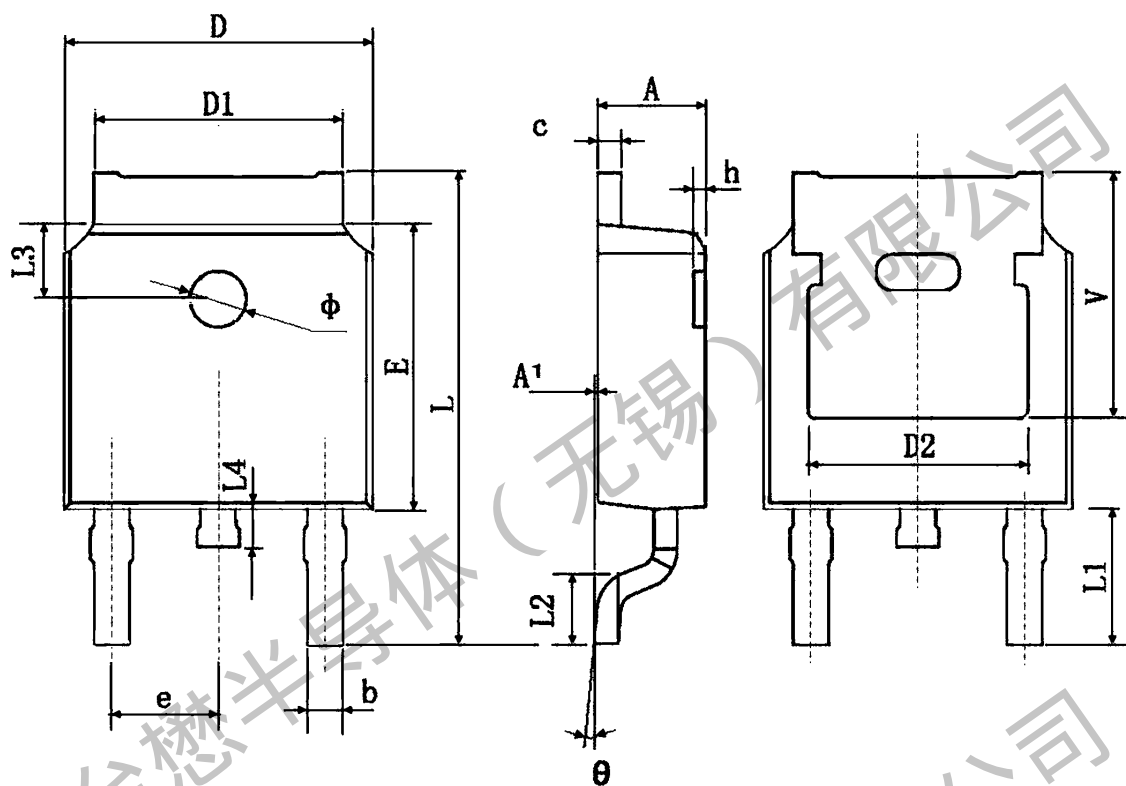


Figure 10. Maximum Safe Operating Area

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Package Mechanical Data: TO-252-3L

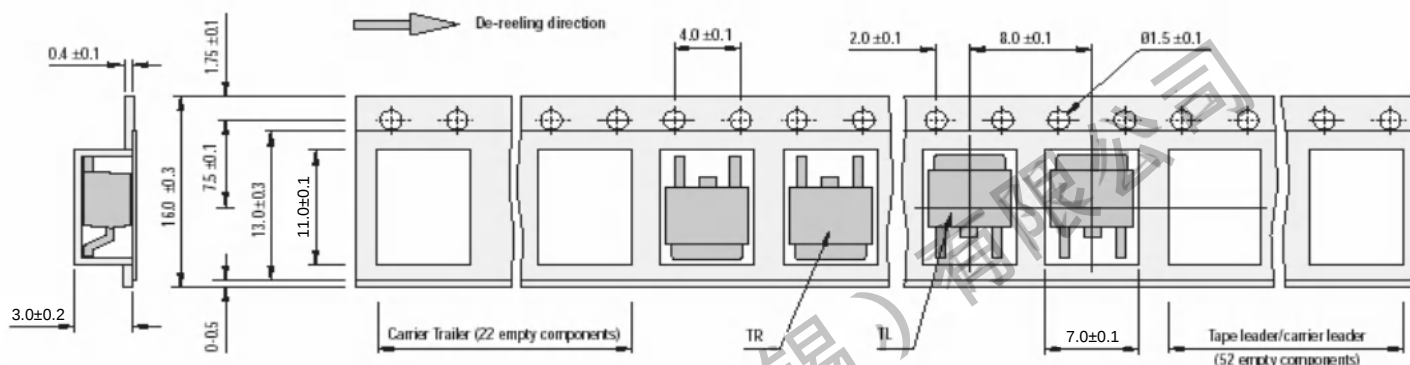


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 TYP.		0.190 TYP.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386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

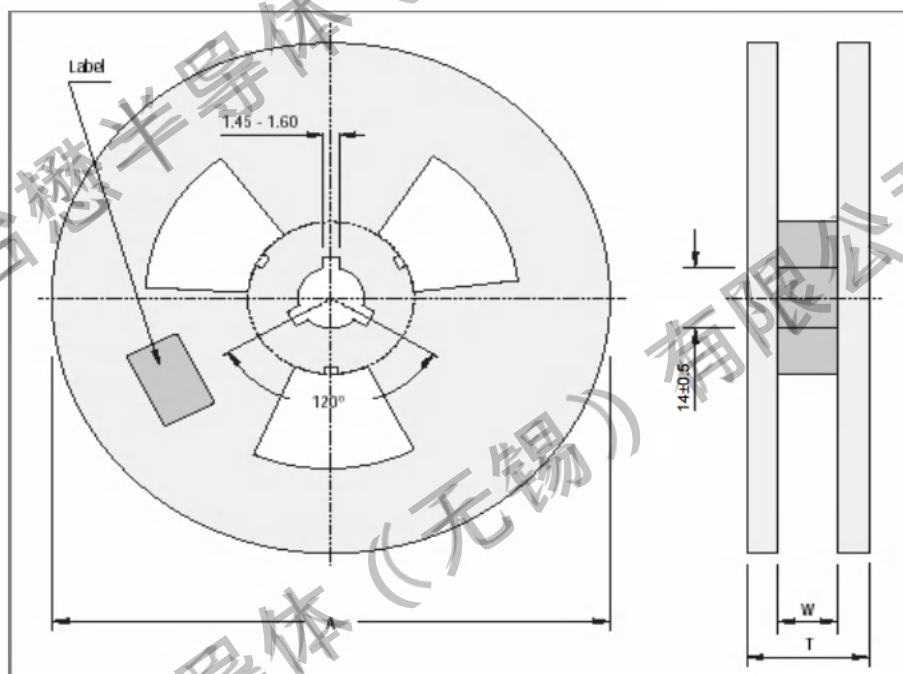
TM80P06D

P-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	

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Revision history:

Date	Rev	Description	Page
2023.04.25	23.04	Original	