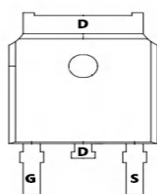


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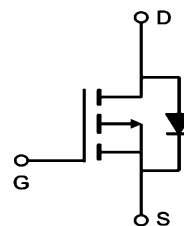
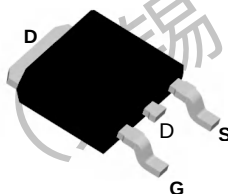
P-Channel Enhancement Mosfet

General Description • Low $R_{DS(ON)}$ • RoHS and Halogen-Free Compliant Applications • Load switch • PWM	General Features $V_{DS} = -60V$ $I_D = -30A$ $R_{DS(ON)} = 24m\Omega$ (typ.) @ $V_{GS} = -10V$ 100% UIS Tested 100% R_g Tested 
--	--

D:TO-252-3L



Marking: 30P06



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, $V_{GS} @ -10V$	-30	A
$I_D @ T_C = 100^\circ C$	Continuous Drain Current, $V_{GS} @ -10V$	-21	A
I_{DM}	Pulsed Drain Current	-124	A
EAS	Single Pulse Avalanche Energy	196	mJ
$P_D @ T_C = 25^\circ C$	Total Power Dissipation	79	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	$^\circ C/W$

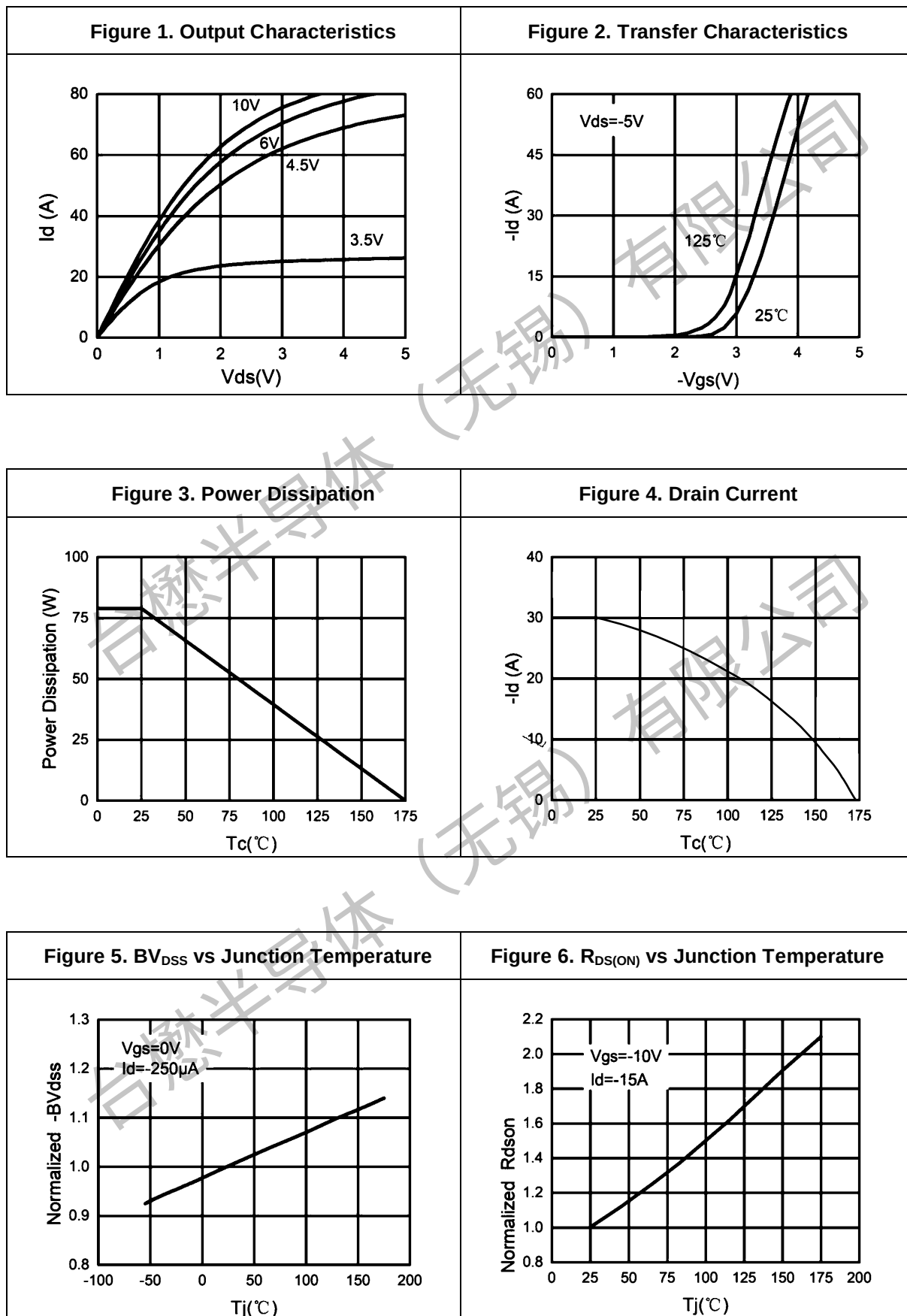
TM30P06D
P-Channel Enhancement Mosfet
Electrical Characteristics ($T_J=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
On/Off States						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V I _D =-250μA	-60			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-60V, V _{GS} =0V			-1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V, V _{DS} =0V			±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-1	-2.0	-3.0	V
g _{FS}	Forward Transconductance	V _{DS} =-5V, I _D =-15A		35		S
R _{DS(ON)}	Drain-Source On-State Resistance	V _{GS} =-10V, I _D =-15A		24	29	mΩ
		V _{GS} =-4.5V, I _D =-10A		30	39	mΩ
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =-25V, V _{GS} =0V, f=1.0MHz		2026		pF
C _{oss}	Output Capacitance			134		pF
C _{rss}	Reverse Transfer Capacitance			98		pF
Switching Parameters						
t _{d(on)}	Turn-on Delay Time	V _{GS} =-10V, V _{DS} =-30V, R _L =1.5Ω, R _{GEN} =3Ω		12.2		nS
t _r	Turn-on Rise Time			10		nS
t _{d(off)}	Turn-Off Delay Time			64		nS
t _f	Turn-Off Fall Time			14		nS
Q _g	Total Gate Charge	V _{GS} =-10V, V _{DS} =-30V, I _D =-20A		68		nC
Q _{gs}	Gate-Source Charge			10.5		nC
Q _{gd}	Gate-Drain Charge			13		nC
Source-Drain Diode Characteristics						
I _{SD}	Source-Drain Current (Body Diode)				-30	A
V _{SD}	Forward on Voltage (Note 3)	V _{GS} =0V, I _S =-15A			-1.2	V
t _{rr}	Reverse Recovery Time	I _F =-20A, di/dt=100A/μs		26		ns
Q _{rr}	Reverse Recovery Charge	I _F =-20A, di/dt=100A/μs		29		nC

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P-Channel Enhancement Mosfet

Typical Electrical And Thermal Characteristics (Curves)



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Figure 7. Gate Charge Waveforms

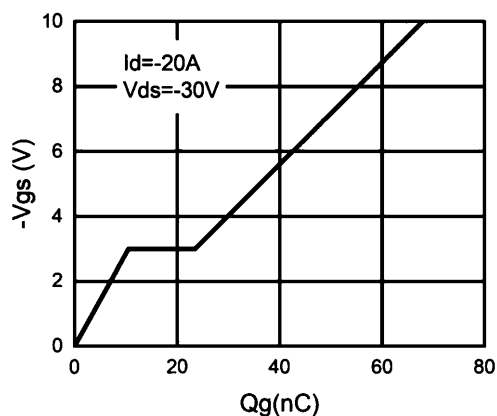


Figure 8. Capacitance

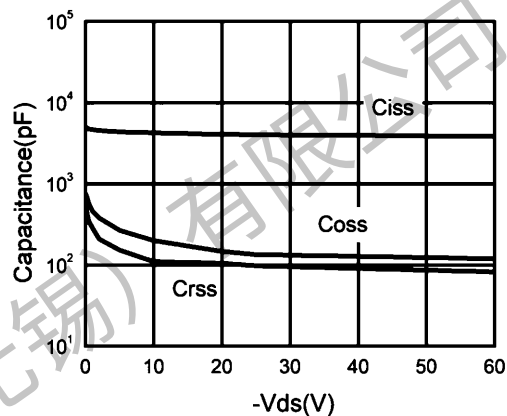


Figure 9. Body-Diode Characteristics

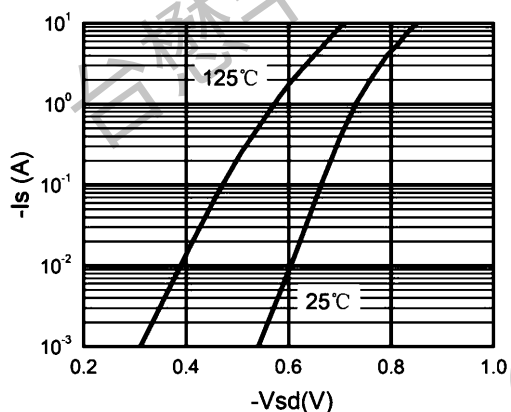
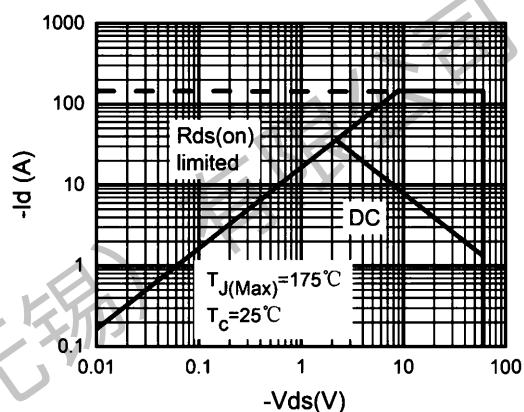


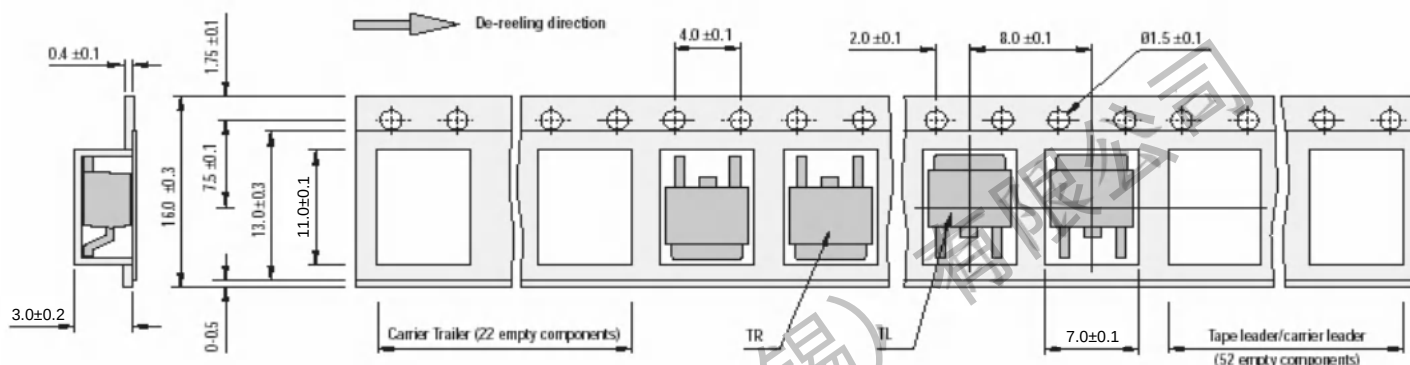
Figure 10. Maximum Safe Operating Area



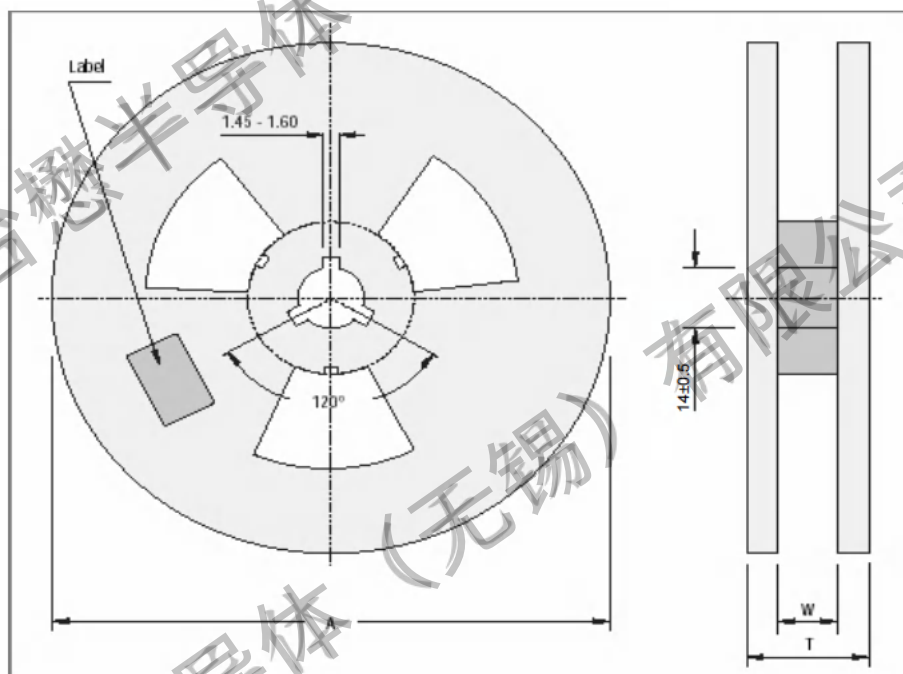
TM30P06D

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
2023.06.15	23.06	Original	