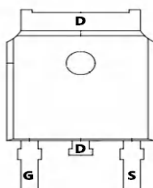
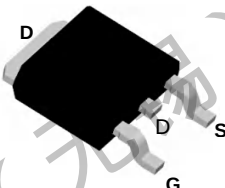
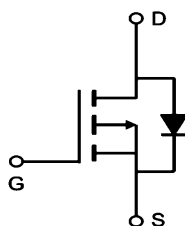


TM25P10D

P-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=-25A R_{DS(ON)} = 52mΩ(typ.) @ V_{GS} =-10V 100% UIS Tested 100% R_g Tested  Green Product																																																											
D:TO-252-3L    Marking: 25P10																																																											
Absolute Maximum Ratings (T_C = 25°C Unless Otherwise Noted) <table><tr><th>Symbol</th><th>Parameter</th><th>Rating</th><th>Units</th></tr><tr><td>V_{DS}</td><td>Drain-Source Voltage</td><td>-100</td><td>V</td></tr><tr><td>V_{GS}</td><td>Gate-Source Voltage</td><td>±20</td><td>V</td></tr><tr><td>I_D@T_C=25°C</td><td>Continuous Drain Current, V_{GS}@ - 10V</td><td>-25</td><td>A</td></tr><tr><td>I_D@T_C=100°C</td><td>Continuous Drain Current, V_{GS}@ - 10V</td><td>-21</td><td>A</td></tr><tr><td>I_{DM}</td><td>Pulsed Drain Current</td><td>-90</td><td>A</td></tr><tr><td>EAS</td><td>Single Pulse Avalanche Energy</td><td>361</td><td>mJ</td></tr><tr><td>I_{AS}</td><td>Avalanche Current</td><td>-17</td><td>A</td></tr><tr><td>P_D@T_C=25°C</td><td>Total Power Dissipation</td><td>107</td><td>W</td></tr><tr><td>T_{STG}</td><td>Storage Temperature Range</td><td>-55 to 175</td><td>°C</td></tr><tr><td>T_J</td><td>Operating Junction Temperature Range</td><td>-55 to 175</td><td>°C</td></tr></table> Thermal Data <table><tr><th>Symbol</th><th>Parameter</th><th>Typ.</th><th>Max.</th><th>Unit</th></tr><tr><td>R_{θJA}</td><td>Thermal Resistance Junction-ambient</td><td>---</td><td>62</td><td>°C/W</td></tr><tr><td>R_{θJC}</td><td>Thermal Resistance Junction-Case</td><td>---</td><td>6.6</td><td>°C/W</td></tr></table>	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	-25	A	I _D @T _C =100°C	Continuous Drain Current, V _{GS} @ - 10V	-21	A	I _{DM}	Pulsed Drain Current	-90	A	EAS	Single Pulse Avalanche Energy	361	mJ	I _{AS}	Avalanche Current	-17	A	P _D @T _C =25°C	Total Power Dissipation	107	W	T _{STG}	Storage Temperature Range	-55 to 175	°C	T _J	Operating Junction Temperature Range	-55 to 175	°C	Symbol	Parameter	Typ.	Max.	Unit	R _{θJA}	Thermal Resistance Junction-ambient	---	62	°C/W	R _{θJC}	Thermal Resistance Junction-Case	---	6.6	°C/W
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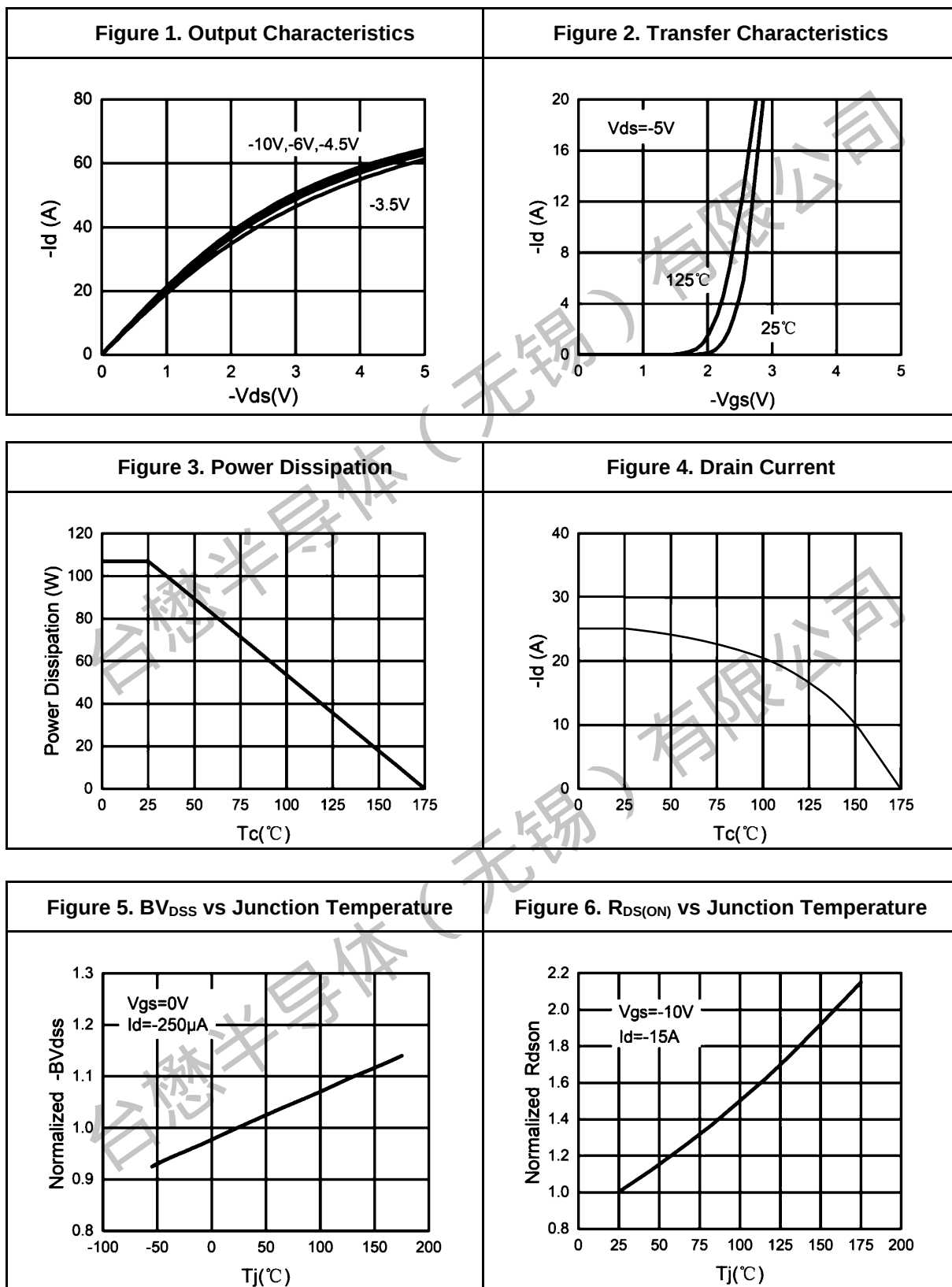
TM25P10D
P-Channel Enhancement Mosfet
Electrical Characteristics ($T_J=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
On/Off States						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V I _D =-250μA	-100	-127		V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-100V, 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	-3	V
g _{FS}	Forward Transconductance	V _{DS} =-5V, I _D =-15A		50		S
R _{DS(ON)}	Drain-Source On-State Resistance	V _{GS} =-10V, I _D =-15A		52	57	mΩ
		V _{GS} =-4.5V, I _D =-10A		---	---	mΩ
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =-25V, V _{GS} =0V, f=1.0MHz		4056		pF
C _{oss}	Output Capacitance			195		pF
C _{rss}	Reverse Transfer Capacitance			70		pF
Switching Parameters						
t _{d(on)}	Turn-on Delay Time	V _{GS} =-10V, V _{DS} =-50V, R _L =3.3Ω, R _{GEN} =9.1Ω		13		nS
t _r	Turn-on Rise Time			64		nS
t _{d(off)}	Turn-Off Delay Time			36		nS
t _f	Turn-Off Fall Time			52		nS
Q _g	Total Gate Charge	V _{GS} =-10V, V _{DS} =-50V, I _D =-10A		147		nC
Q _{gs}	Gate-Source Charge			17		nC
Q _{gd}	Gate-Drain Charge			31		nC
Source-Drain Diode Characteristics						
I _{SD}	Source-Drain Current (Body Diode)				-25	A
V _{SD}	Forward on Voltage (Note 3)	V _{GS} =0V, I _S =-15A			-1.2	V
t _{rr}	Reverse Recovery Time	I _F =-15A, di/dt=100A/μs		72		ns
Q _{rr}	Reverse Recovery Charge	I _F =-15A, di/dt=100A/μs		120		nC

TM25P10D

P-Channel Enhancement Mosfet

Typical Electrical And Thermal Characteristics (Curves)



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Figure 7. Gate Charge Waveforms

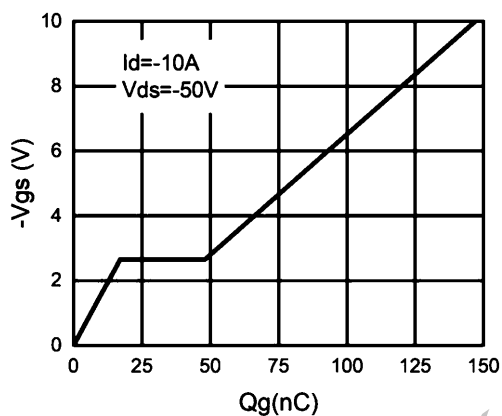


Figure 8. Capacitance

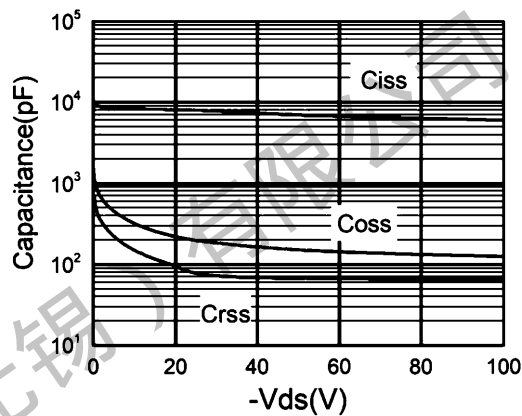


Figure 9. Body-Diode Characteristics

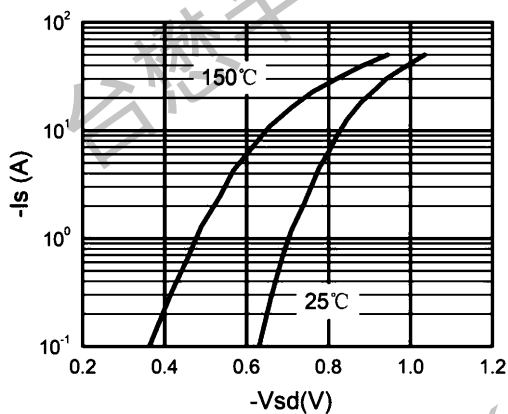
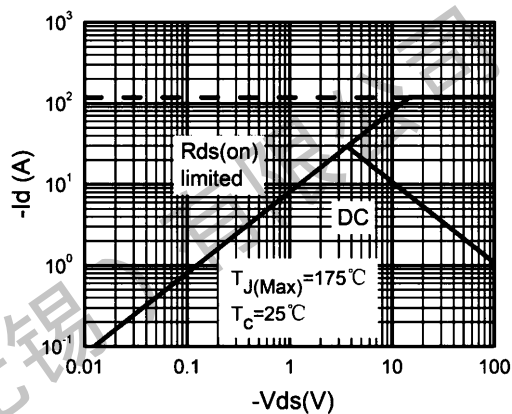


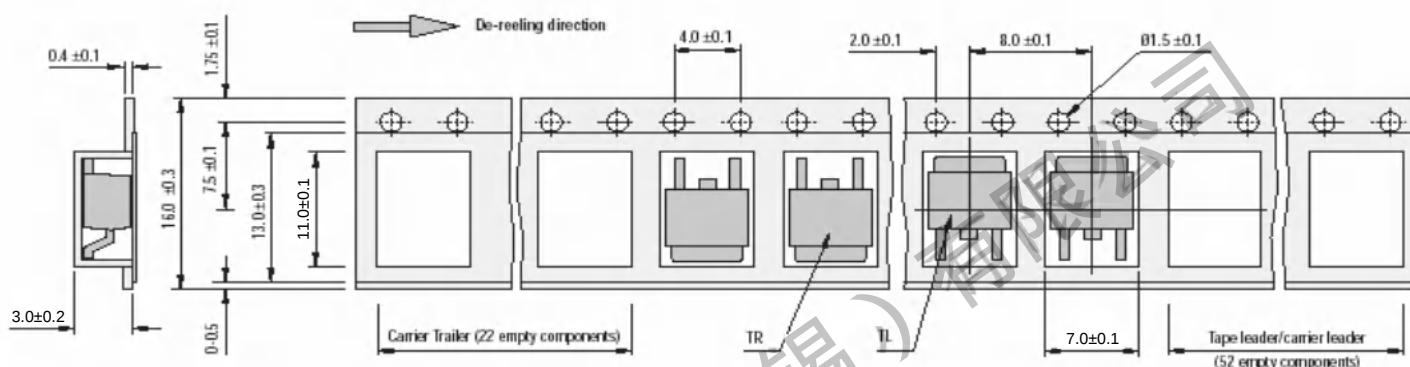
Figure 10. Maximum Safe Operating Area



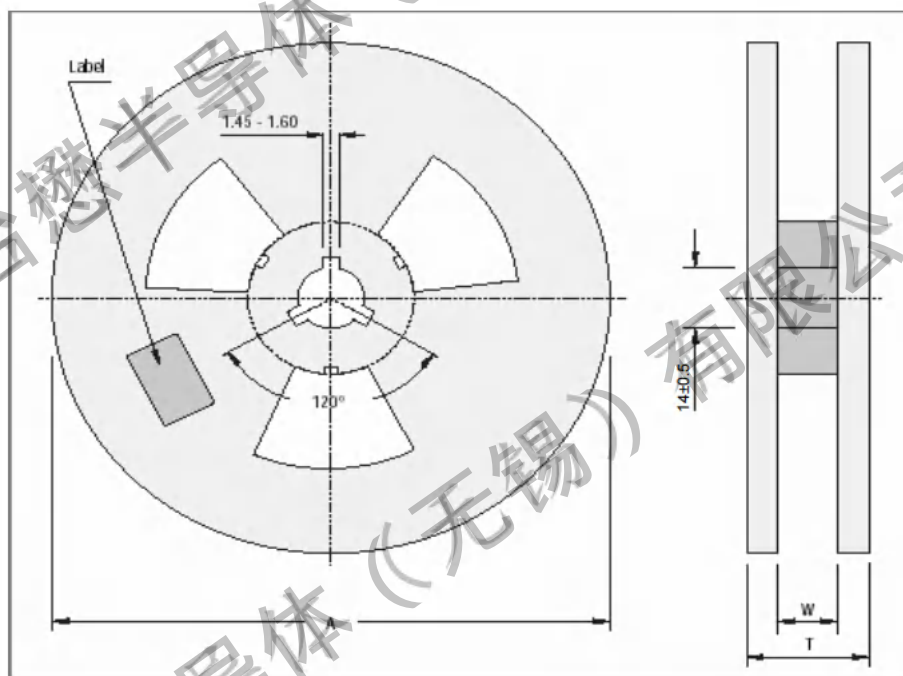
TM25P10D

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
2023.09.15	23.09	Original	