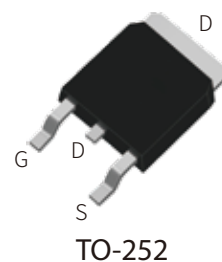


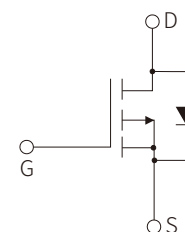
FEATURES

- | 100% EAS Guaranteed
- | Green Device Available
- | Excellent CdV/dt effect decline
- | Advanced high cell density Trench technology



APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003



Schematic Symbol

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	-150	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_C=25^{\circ}\text{C}$	I_D	-30	A
	$T_C=100^{\circ}\text{C}$		-16	
Pulsed Drain Current		I_{DM}	-100	A
Single Pulse Avalanche Energy		EAS	380	mJ
Total Power Dissipation $T_C=25^{\circ}\text{C}$		P_D	23	W
Thermal Resistance from Junction-to-Case		$R_{\theta JC}$	2.1	$^{\circ}\text{C/W}$
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-150			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-150V, V_{GS}=0V, T_J=25^{\circ}C$			-1	μA
		$V_{DS}=-150V, V_{GS}=0V, T_J=100^{\circ}C$			-5	
Gate-body Leakage current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-1.8	-2.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-12A$		77	104	m Ω
		$V_{GS}=-4.5V, I_D=-8A$		78	105	m Ω
Forward Transconductance	g_{fs}	$V_{DS}=-10V, I_D=-3A$		11		S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=-75V, V_{GS}=0V$ Frequency = 1 MHz		8178		pF
Output Capacitance	C_{oss}			127		pF
Reverse Transfer Capacitance	C_{rss}			114		pF
Gate Resistance	R_g	$V_{DS}=0V, V_{GS}=0V, f=1MHz$		0.8		Ω
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=-75V, V_{GS}=-10V,$ $R_{GEN}=3\Omega, I_D=-3A$		36.2		nS
Turn-On Rise Time	t_r			136		nS
Turn-Off Delay Time	$t_{d(off)}$			85		nS
Turn-Off Fall Time	t_f			60		nS
Total Gate Charge	Q_g	$V_{DS}=-75V, V_{GS}=-10V, I_D=-3A$		142		nC
Gate- Source Charge	Q_{gs}			26.7		nC
Gate- Drain Charge	Q_{gd}			50		nC
Body Diode Reverse Recovery Time	t_{rr}	$I_F=-3A, dI/dt=100A/\mu s, T_J=25^{\circ}C$		88		ns
Body Diode Reverse Recovery Charge	Q_{rr}			182		nC
Drain-Source Body Diode Characteristics						
Diode Forward Voltage	V_{SD}	$I_S=-3A, V_{GS}=0V, T_J=25^{\circ}C$			-1.2	V
Continuous Source Current $T_C=25^{\circ}C$	I_S	$V_G=V_D=0V$, Force Current			-30	A

PARAMETER CHARACTERISTIC CURVE

Figure1 : Output Characteristics

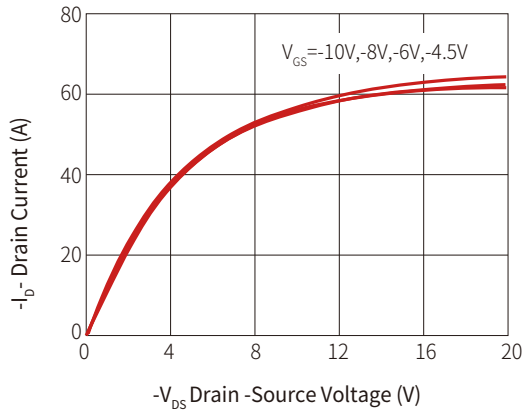


Figure2 : Transfer Characteristics

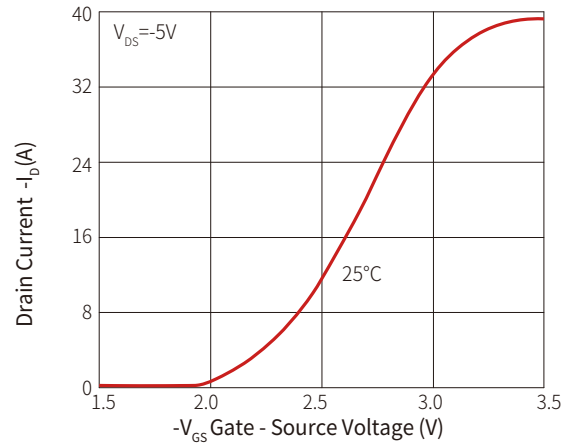


Figure3 : Power Dissipation

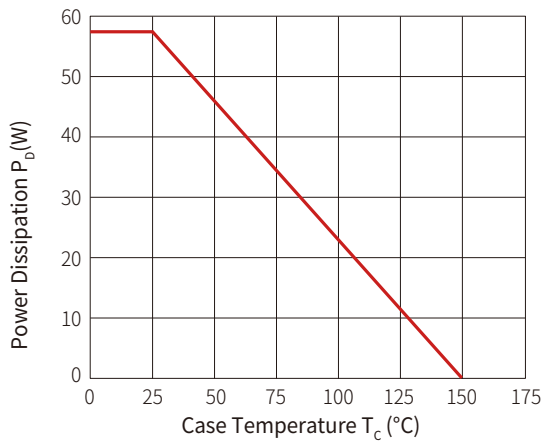


Figure4 : Drain Current

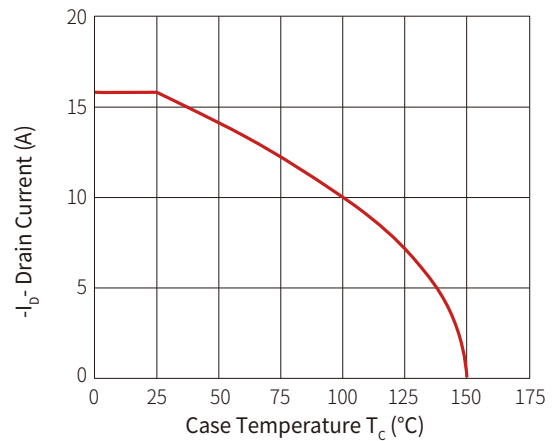


Figure5 : BV_{DSS} vs Junction Temperature

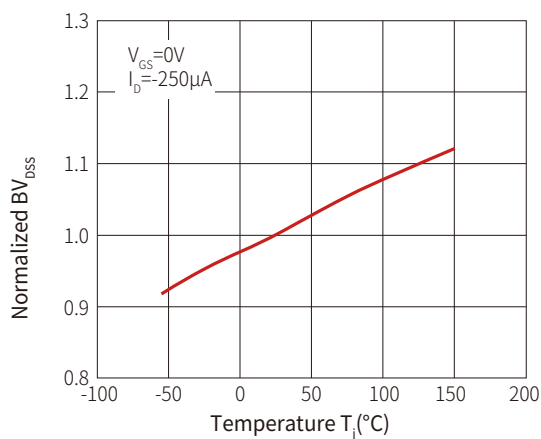


Figure6 : $R_{DS(ON)}$ vs Junction Temperature

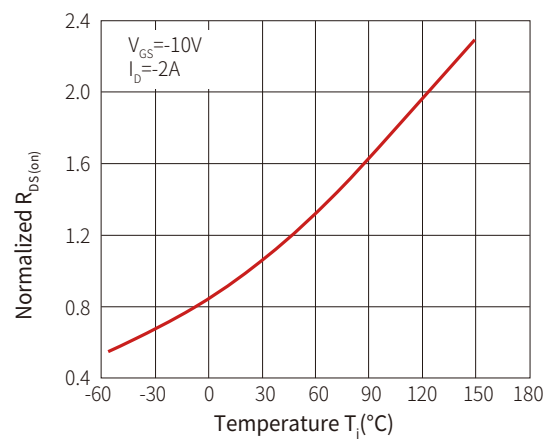
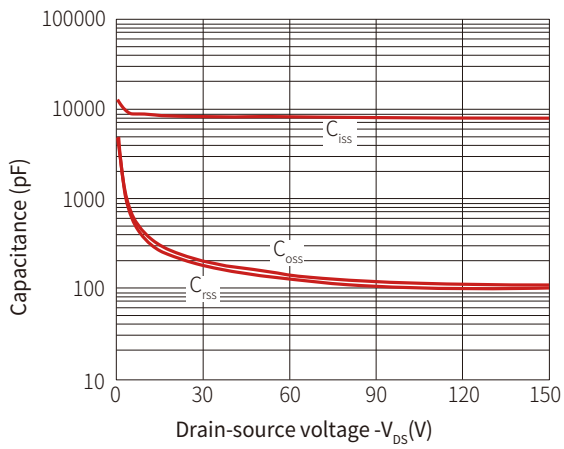
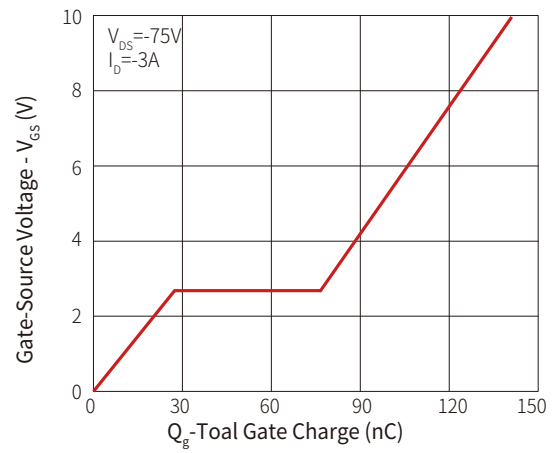
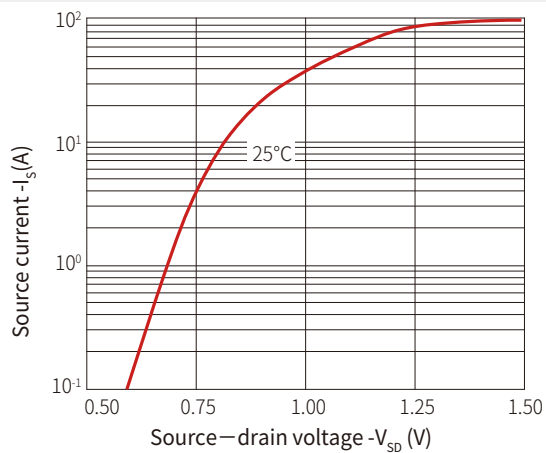
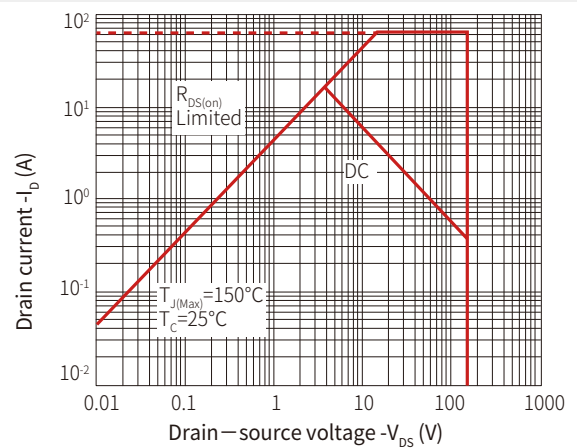
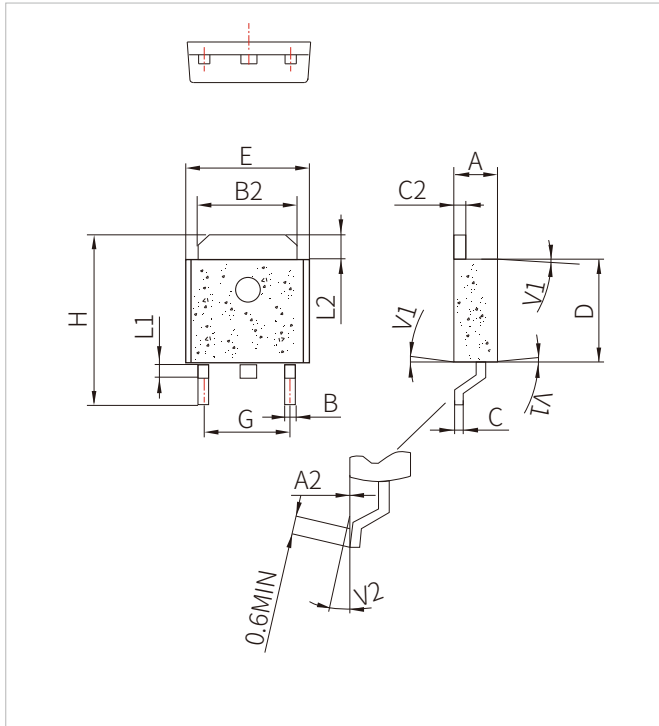


Figure7 : Capacitance Characteristics

Figure8 : Gate Charge Characteristics

Figure9 : Body-Diode Characteristics

Figure10 : Safe Operating Area


TO-252 PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0.03		0.23	0.001		0.009
B	0.50		1.00	0.020		0.039
B2	5.10		5.40	0.200		0.213
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	5.30		6.40	0.209		0.252
E	6.10		6.80	0.240		0.268
G	4.40		4.70	0.173	0.1	0.185
H	9.35		10.7	0.368		0.421
L1	1.30		1.70	0.051	0.143	0.067
L2	1.37		1.50	0.054		0.059
V1		4°			0.130	
V2	0°		8°	0°		8°

ORDERING INFORMATION

Part Number	Component Package	Marking	QTY/Reel	Reel Size
SPM30P15D	TO-252	 30P15 XXXX	2500PCS	13"

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