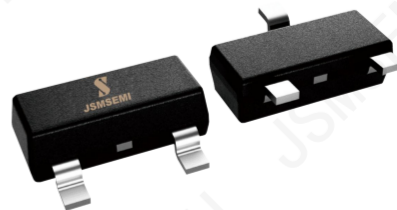


Product Summary

- V_{DS} 60V
- I_D 3A
- $R_{DS(ON)}$ (at $V_{GS}=10V$) < 90m Ω
- 100% EAS Tested
- 100% ∇V_{DS} Tested



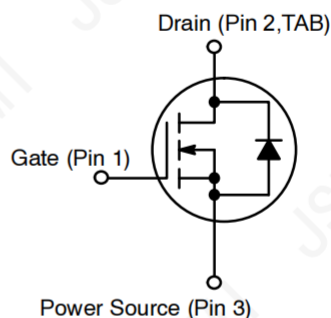
SOT-23

General Description

- Trench Power MOSFET technology
- Excellent package for heat dissipation
- High density cell design for low $R_{DS(ON)}$
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Halogen Free

Applications

- Power switching application
- Uninterruptible power supply
- DC-DC convertor
- Motor drivers



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

Symbol	Parameter		Typical	Unit
V_{DSS}	Drain-Source Voltage		60	V
V_{GSS}	Gate-Source Voltage		± 20	V
I_D	Continuous Drain Current ($T_J=150^\circ\text{C}$)	$V_{GS}=10.0V$	3.0	A
I_{DM}	Pulsed Drain Current		10	A
I_S	Continuous Source Current (Diode Conduction)		1	A
P_D	Power Dissipation	$T_A=25^\circ\text{C}$	1.25	W
		$T_A=75^\circ\text{C}$	0.8	
T_J	Operation Junction Temperature		150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range		-55~+150	$^\circ\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress rating only and functional device operation is not implied

THERMAL DATA

Symbol	Parameter	Min	Typ	Max	Unit
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient		62.5	125	$^\circ\text{C}/\text{W}$

Ordering Information

Order number	Package	Operation Temperature Range	MSL Grade	Ship, Quantity	Green
PMV37ENEAR-JSM	SOT-23	-55~+150 $^\circ\text{C}$	1	T&R,3000	Rohs

ELECTRICAL CHARACTERISTICS (VDD=2.75V, TA=25°C Unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Parameters						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	60			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	0.6		2	V
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} =±12V			±100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =60V, V _{GS} =0			1	uA
		V _{DS} =60V, V _{GS} =0 T _J =85℃			5	
I _{D(ON)}	On=State Drain Current	V _{DS} ≥5V, V _{GS} =4.5V	10			A
R _{DS(ON)}	Drain-Source On-Resistance	V _{GS} =10V, I _D =3.0A		68	90	mΩ
		V _{GS} =4.5V, I _D =3.0A		78	110	
G _{fs}	Forward Transconductance	V _{DS} =5V, I _D =2.1A		10		S
Source-Drain Diode						
V _{SD}	Diode Forward Voltage	I _S =1.0A, V _{GS} =0V		0.8	1.0	V
Dynamic Parameters						
Q _g	Total Gate Charge	V _{DS} =27V V _{GS} =4.5V I _D =2.1A		2.1	3.9	nC
Q _{gs}	Gate-Source Charge			0.6		
Q _{gd}	Gate-Drain Charge			0.8		
C _{iSS}	Input Capacitance	V _{DS} =25V V _{GS} =0V f=1MHz		295		pF
C _{oSS}	Output Capacitance			40		
C _{rSS}	Reverse Transfer Capacitance			15		
T _{d(on)}	Turn-On Time	V _{DS} =27V R _L =10Ω I _D =1A		3.6		nS
T _r				3.5		
T _{d(off)}	Turn-Off Time		V _{GEN} =4.5V R _G =6Ω		32	
T _f				3		

Note: 1. Pulse test: pulse width≤300uS, duty cycle≤2%

2. Static parameters are based on package level with recommended wire bonding

TYPICAL CHARACTERISTICS (25°C Unless Note)

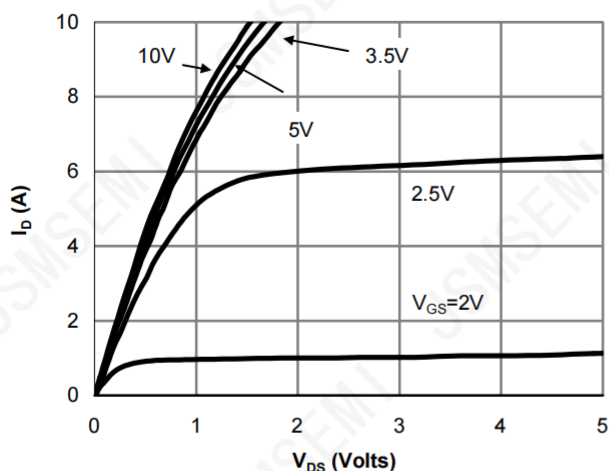


Fig 1: On-Region characteristics

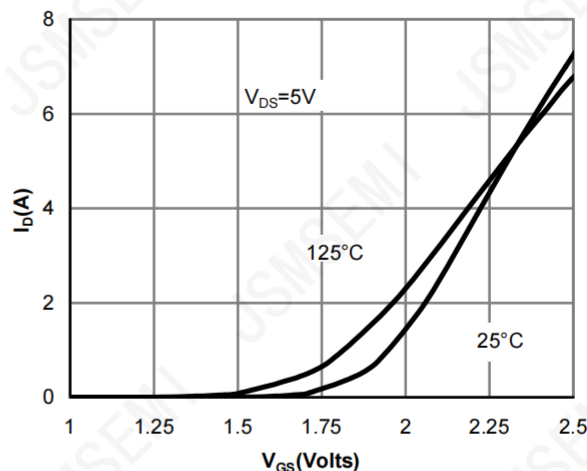


Figure 2: Transfer Characteristics

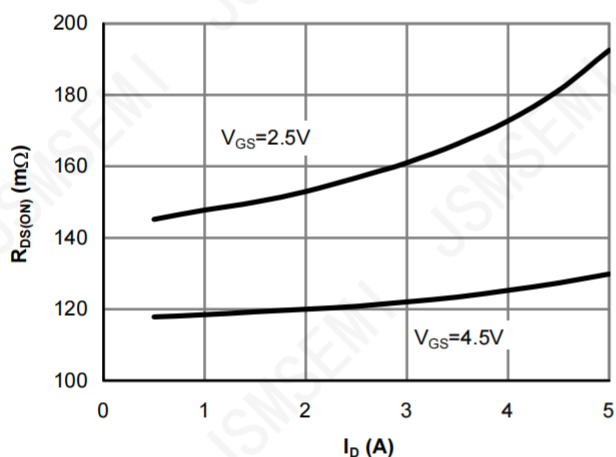


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

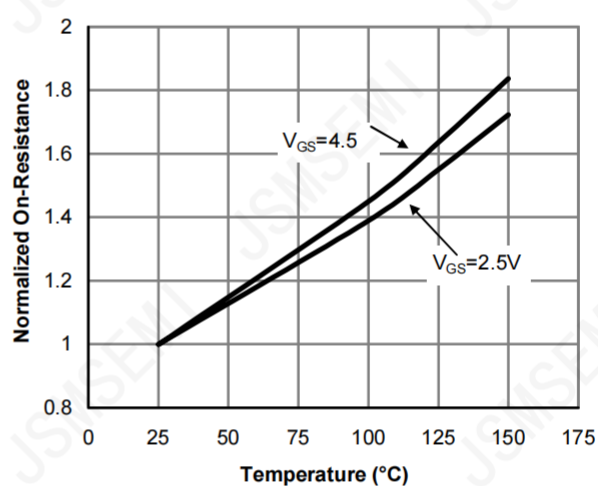


Figure 4: On-Resistance vs. Junction Temperature

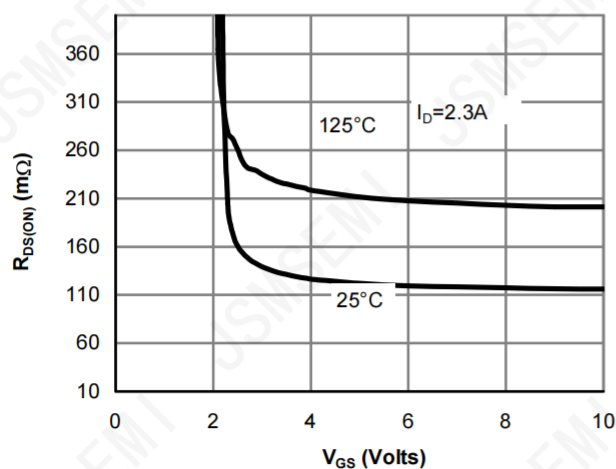


Figure 5: On-Resistance vs. Gate-Source Voltage

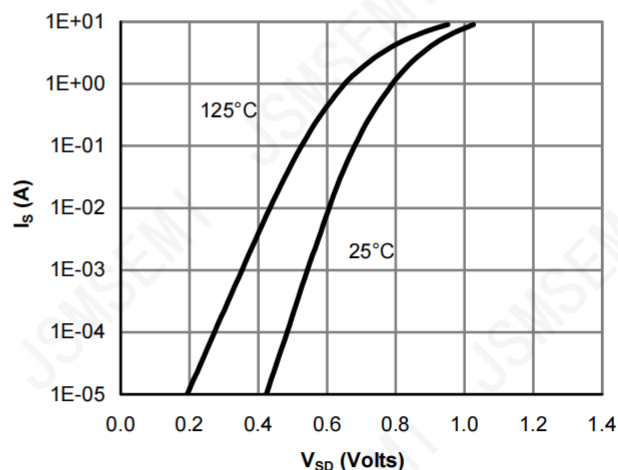
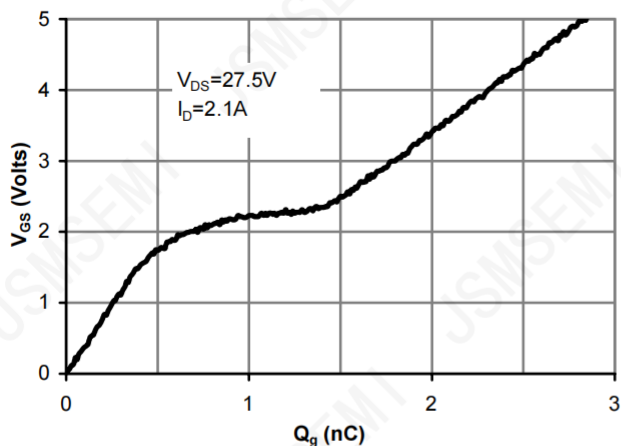
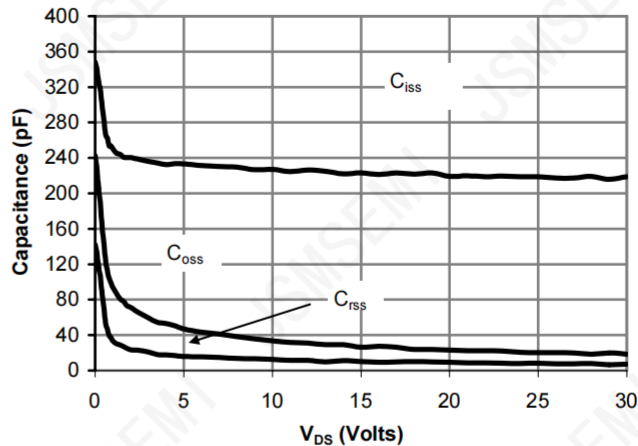
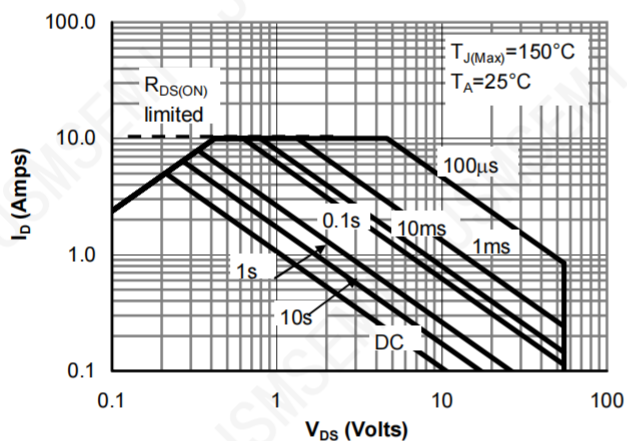
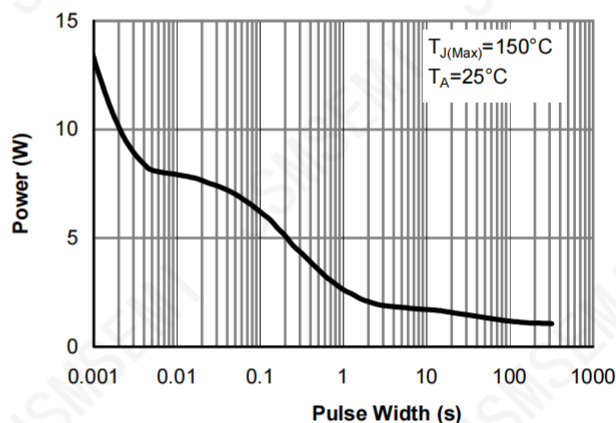
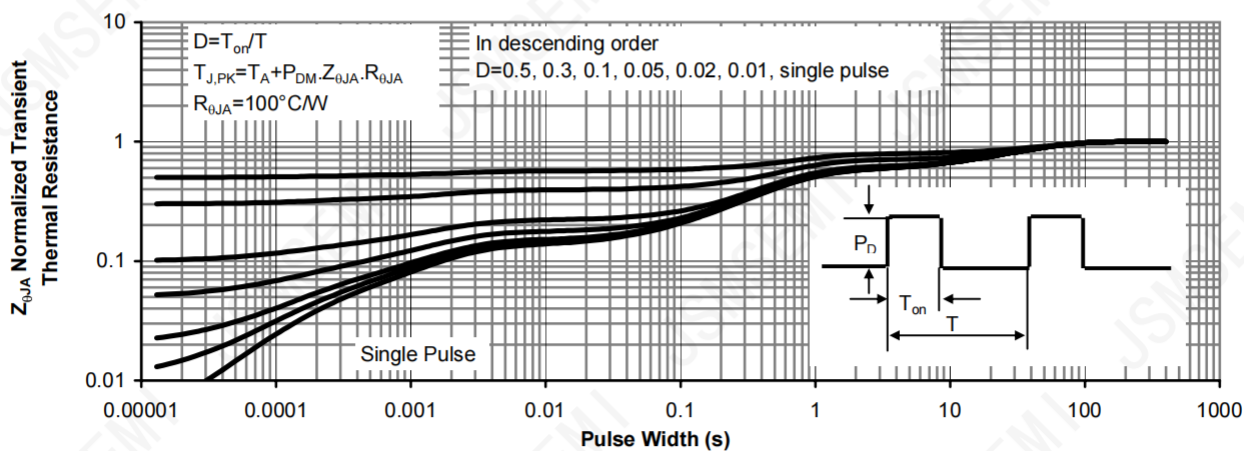
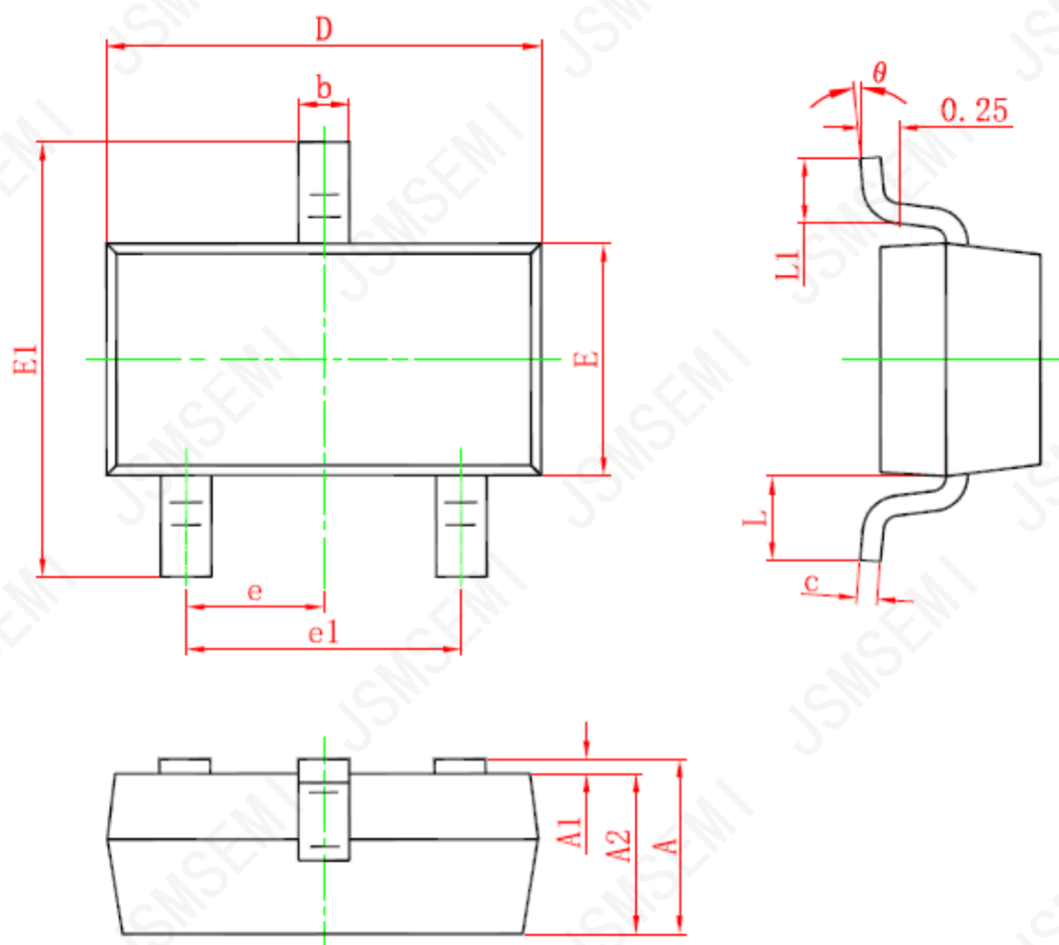


Figure 6: Body-Diode Characteristics

TYPICAL CHARACTERISTICS (continuous)

Figure 7: Gate-Charge Characteristics

Figure 8: Capacitance Characteristics

Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

Figure 11: Normalized Maximum Transient Thermal Impedance

SOT-23 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Revision History

Rev.	Change	Date
V1.0	Initial version	6/27/2021

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