

30V P-Channel MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
-30V	88mΩ@-10V	-2.7A
	138mΩ@-4.5V	

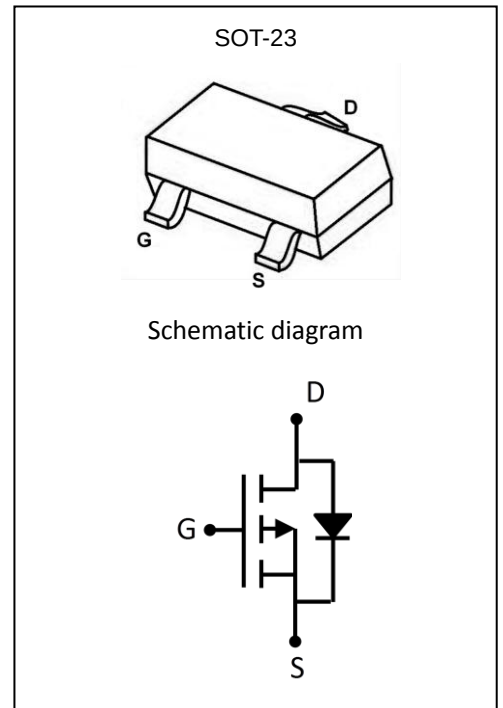
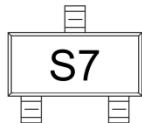
Feature

- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$ and Low Gate Charge
- AEC-Q101 qualified (Automotive grade with suffix "Q".)
- Expsemi electronicsy

Application

- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

MARKING:



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-2.7	A
Continuous Source-Drain Current	I_S	-0.91	A
Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}\text{C}$

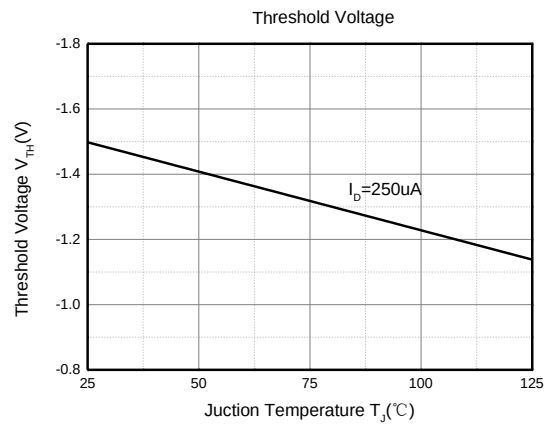
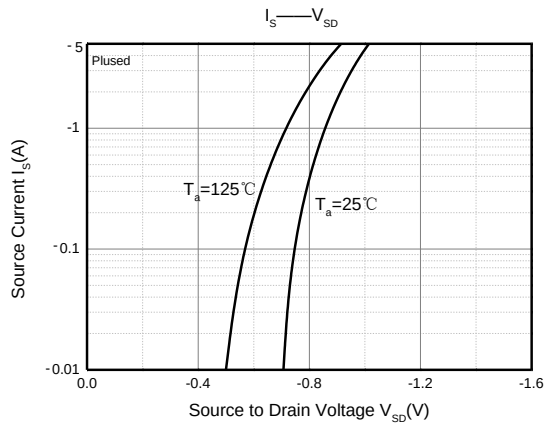
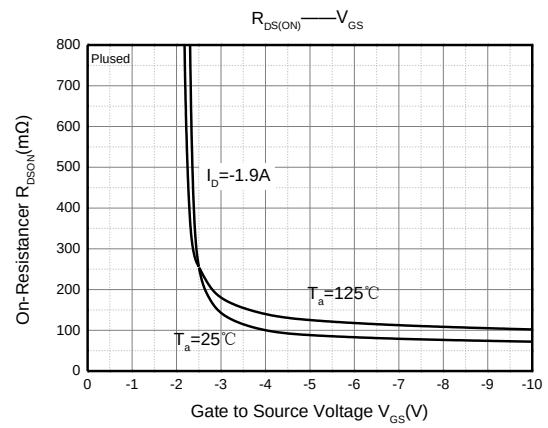
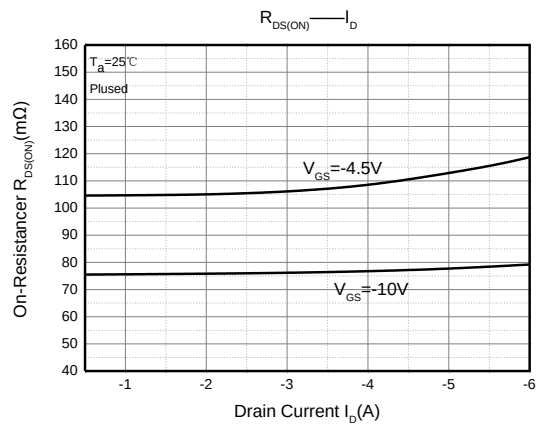
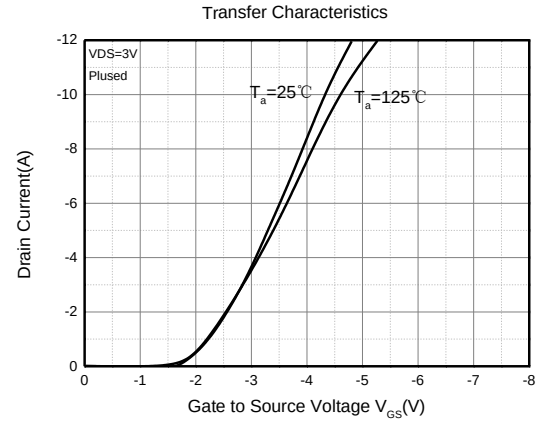
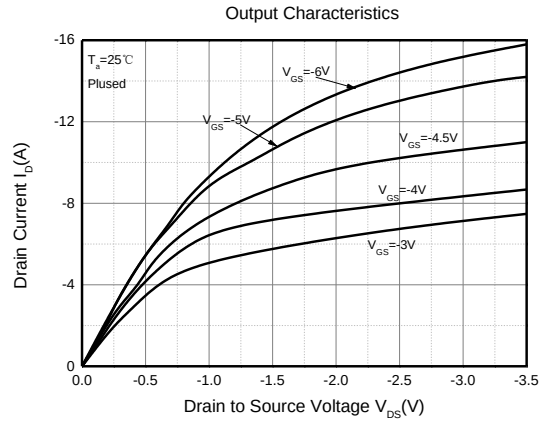
MOSFET ELECTRICAL CHARACTERISTICS($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =-250μA	-30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =-30V,V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±20V, V _{DS} = 0V			±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-1	-1.5	-3	V
Drain-source on-resistance ^a	R _{DS(on)}	V _{GS} =-10V, I _D =-3.5A		75	88	mΩ
		V _{GS} =-4.5V, I _D =-2.5A		105	138	
Forward tranconductance ^a	g _{FS}	V _{DS} =-10V, I _D =-3.5A	1			S
Dynamic characteristics ^b						
Input Capacitance	C _{iSS}	V _{DS} =-15V,V _{GS} =0V,f =1MHz		340		pF
Output Capacitance	C _{oss}			67		
Reverse Transfer Capacitance	C _{rSS}			51		
Total Gate Charge	Q _g	V _{DS} =-15V,V _{GS} =-4.5V,I _D =-2.5A		4.1		nC
Gate-Source Charge	Q _{gs}			1.2		
Gate-Drain Charge	Q _{gd}			1.7		
Turn-on delay time	t _{d(on)}	V _{DD} =-15V,V _{GEN} =-4.5V,I _D =-1A R _L =15Ω,R _{GEN} =1Ω		39		ns
Turn-on rise time	t _r			40		
Turn-off delay time	t _{d(off)}			20		
Turn-off fall time	t _f			17		
Source-Drain Diode characteristics						
Diode Forward voltage	V _{DS}	V _{GS} =0V, I _S =-1.5A		-0.85	-1.2	V

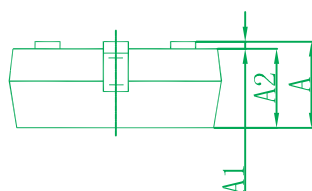
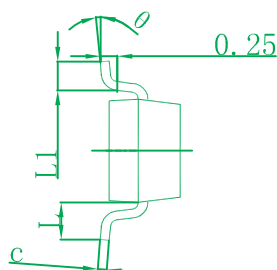
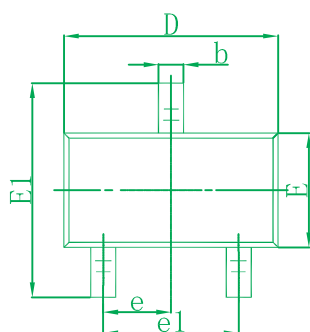
Notes:

- a. Pulse Test : Pulse Width < 300 μs , Duty Cycle $\leq 2\%$.
- b. Guaranteed by design, not subject to production testing.

Typical Electrical and Thermal Characteristics

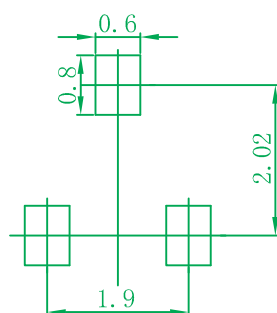


SOT-23 Package Information



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	1.150	0.035	0.045
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.050	0.110	0.120
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	0.360 REF		0.014 REF	
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:
 1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.

Ordering information

Device	Package	Shipping
EP2307	SOT-23	3000/Tape&Reel(7inches)