

Product Summary

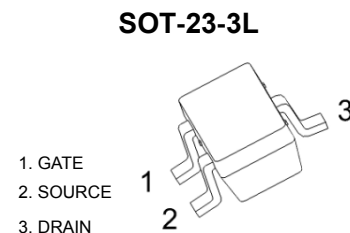
$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-60V	64mΩ@-10V	-6A
	80mΩ@-4.5V	

Feature

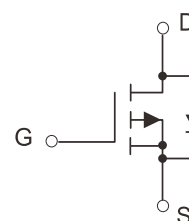
- Trench Technology Power MOSFET Low $R_{DS(ON)}$
- Low Gate Charge
- AEC-Q101 qualified (Automotive grade with suffix " Q ")
- Expsemi electronics

Application

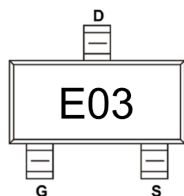
- Load Switch
- DC/DC Converter



Schematic diagram



MARKING:



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

Parameter		Symbol	Value	Unit
Drain - Source Voltage		V_{DS}	-60	V
Gate - Source Voltage		V_{GS}	±20	V
Continuous Drain Current ^{1,5}	$T_A = 25^\circ\text{C}$	I_D	-6	A
	$T_A = 100^\circ\text{C}$		-3.8	
Pulsed Drain Current ²		I_{DM}	-24	A
Power Dissipation ^{4,5}		P_D	1.5	W
Thermal Resistance from Junction to Ambient ⁵		$R_{\theta JA}$	83.3	$^\circ\text{C/W}$
Junction Temperature		T_J	150	$^\circ\text{C}$
Storage Temperature		T_{STG}	-55~ +150	$^\circ\text{C}$

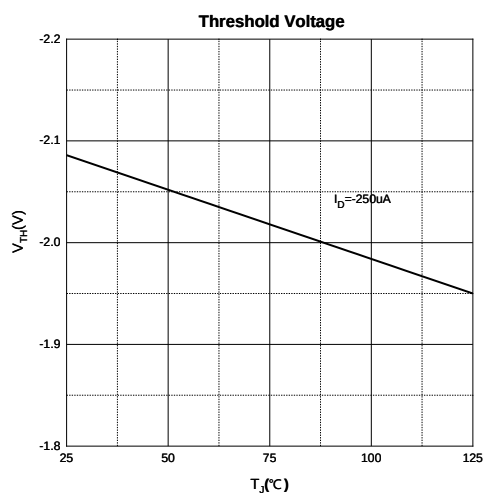
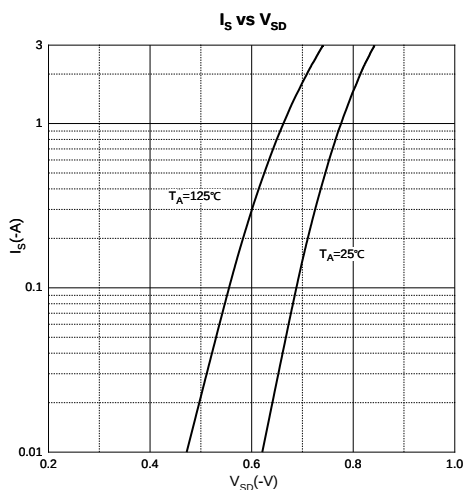
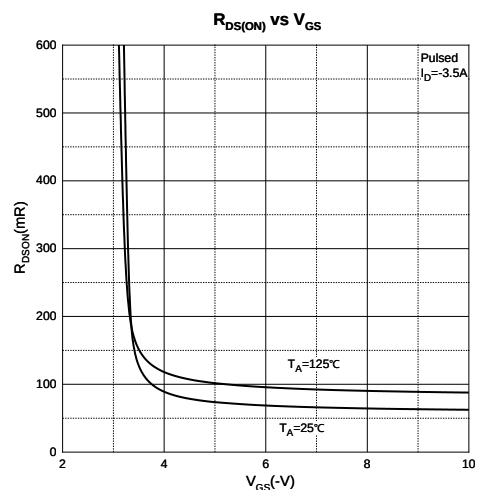
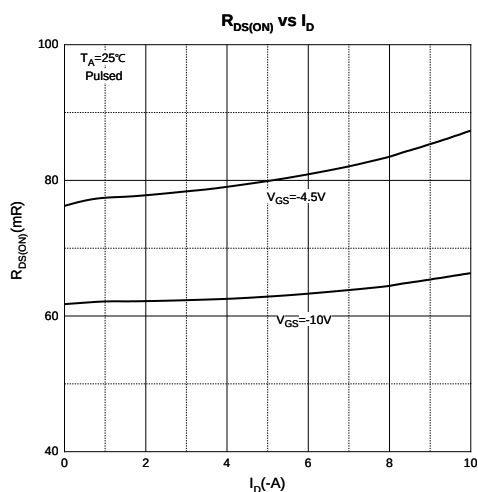
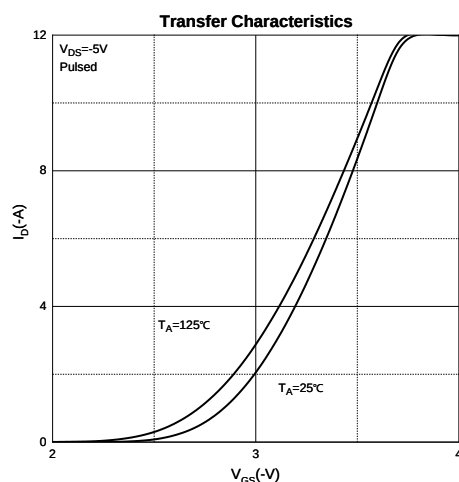
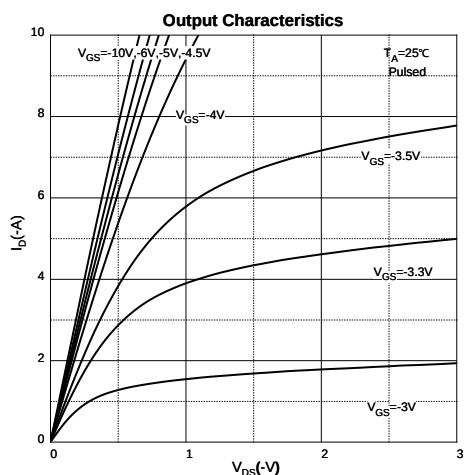
MOSFET ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

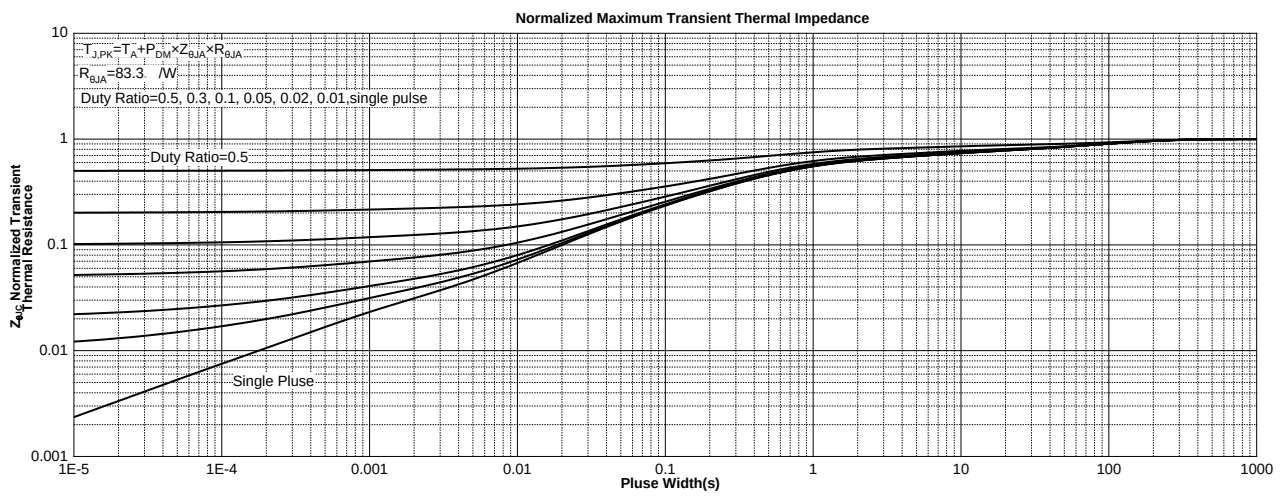
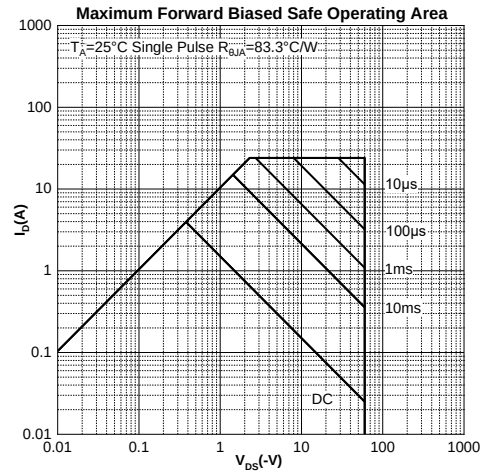
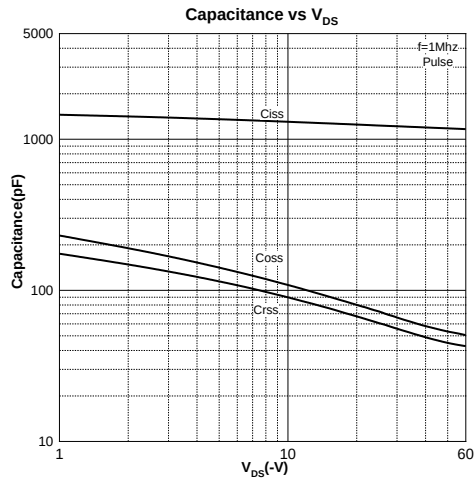
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V , I _D = -250μA	-60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -60V, V _{GS} = 0V			-1	μA
Gate - Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
On Characteristics ³						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	-1	-2	-3	V
Drain-source On-resistance	R _{DS(on)}	V _{GS} = -10V, I _D = -3.5A		64	80	mΩ
		V _{GS} = -4.5V, I _D = -2.8A		80	100	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = -30V, V _{GS} = 0V, f = 1MHz		1224		pF
Output Capacitance	C _{oss}			66		
Reverse Transfer Capacitance	C _{rss}			55		
Gate Resistance	R _g	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz		5.5		Ω
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = -30V, V _{GS} = -10V, I _D = -3.5A		22.5		nC
Gate-source Charge	Q _{gs}			3.7		
Gate-drain Charge	Q _{gd}			5		
Turn-on Delay Time	t _{d(on)}	V _{DD} = -20V, V _{GS} = -10V, I _D = -5A, R _G = 2.4Ω		8		ns
Turn-on Rise Time	t _r			4		
Turn-off Delay Time	t _{d(off)}			32		
Turn-off Fall Time	t _f			7		
Source - Drain Diode Characteristics						
Diode Forward Voltage ³	V _{SD}	V _{GS} = 0V, I _S = -2.8A			-1.2	V

Notes :

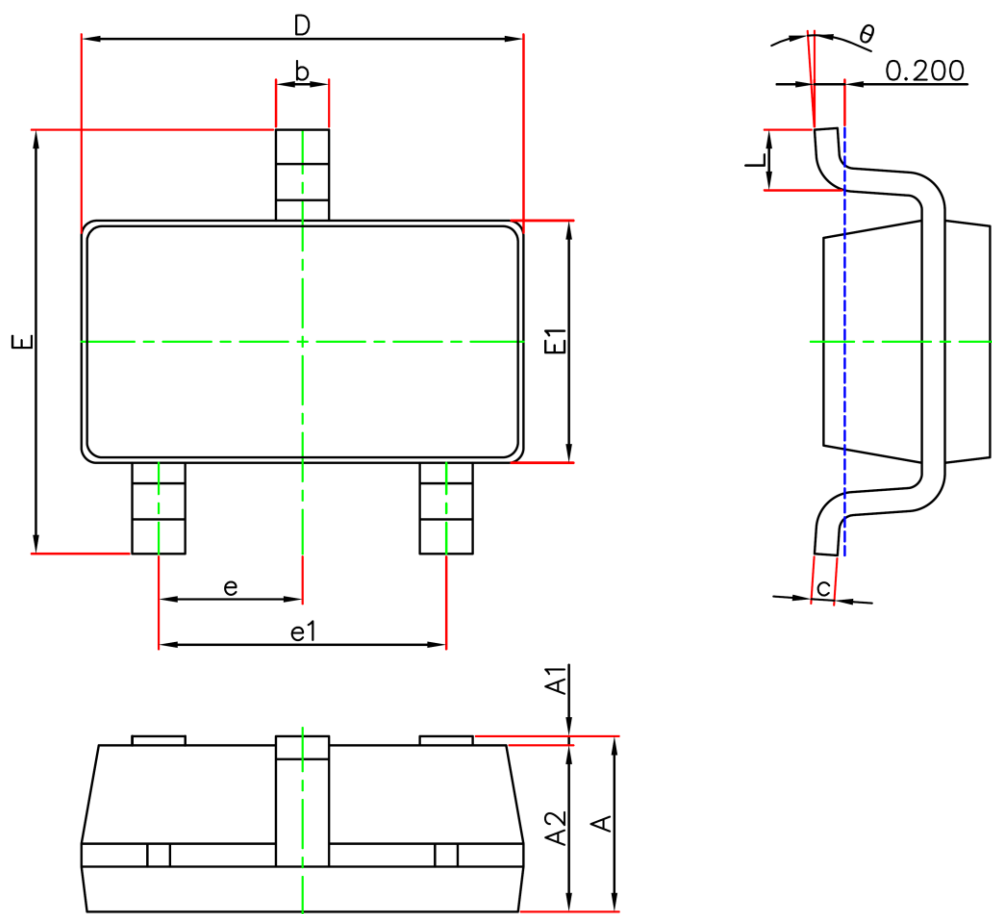
- 1.The maximum current rating is limited by package.
- 2.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 3.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 4.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.
- 5.Device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

Typical Characteristics





SOT-23-3L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0	0.150	0.000	0.006
A2	1.050	1.250	0.041	0.049
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	2.650	2.950	0.104	0.116
E1	1.500	1.700	0.059	0.067
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°