

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
20V	17mΩ@4.5V	6.0A
	23mΩ@2.5V	
	36mΩ@1.8V	

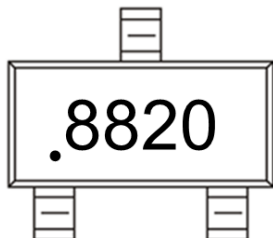
Feature

- Surface Mount Package
- LOW $R_{DS(on)}$
- ESD Protected Gate

Application

- Load/Power Switching
- Small Portable Electronics

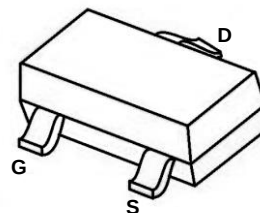
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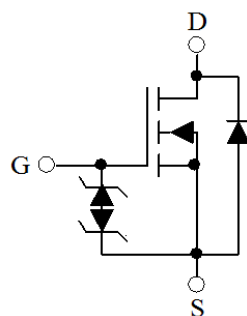
ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	
Continuous Drain Current ^{1,2}	I_D	7	A
Pulsed Drain Current	I_{DM}	28	
Maximum Power Dissipation	P_D	1.25	W
Thermal Resistance from Junction to Ambient ^{1,2}	$R_{\theta JA}$	100	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~+150	

TSOT-23-3L



Schematic diagram



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	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 16V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 10V, V_{DS} = 0V$			± 3	μA
On Characteristics ³						
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.4	0.7	1.0	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 3.0A$		17	25	m Ω
		$V_{GS} = 2.5V, I_D = 3.0A$		23	33	
		$V_{GS} = 1.8V, I_D = 3.0A$		36	55	
Forward tranconductance	g_{FS}	$V_{DS} = 5.0V, I_D = 6.0A$	9			S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$		450		pF
Output Capacitance	C_{oss}			103		
Reverse Transfer Capacitance	C_{rss}			16.1		
Switchig Characteristics						
Total gate charge	Q_g	$V_{DS} = 10V, V_{GS} = 4.5V, I_D = 3.0A$		7.94		nC
Gate-source charge	Q_{gs}			0.56		
Gate-drain charge	Q_{gd}			2.43		
Turn-on delay time	$t_{d(on)}$	$V_{GS} = 4.5V, V_{DD} = 10V, I_D = 1A,$ $R_{GEN} = 6.8\Omega$		4.9		ns
Turn-on rise time	t_r			7.5		
Turn-off delay time	$t_{d(off)}$			19		
Turn-off fall time	t_f			12		
Diode Characteristics						
Diode forward voltage ³	V_{SD}	$I_S = 1A, V_{GS} = 0V$			1.2	V

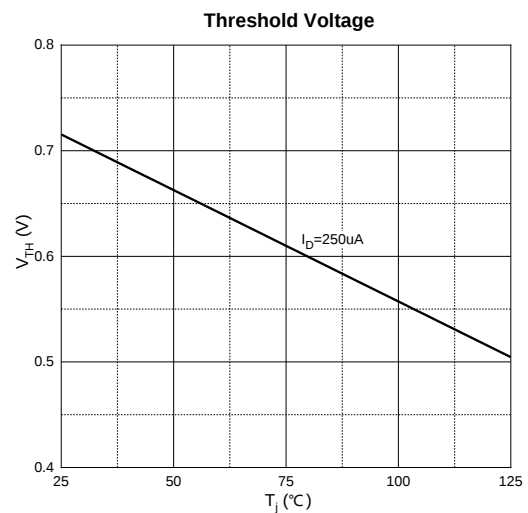
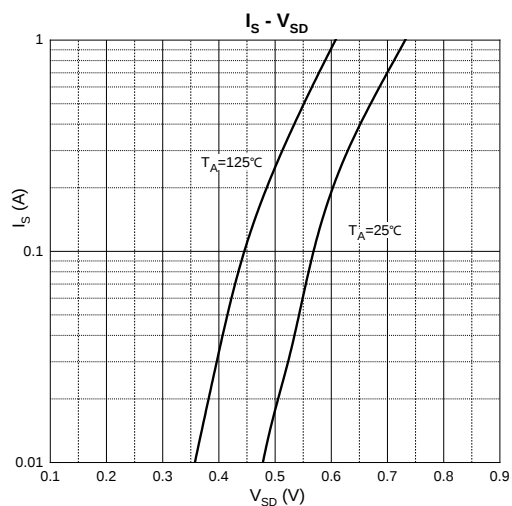
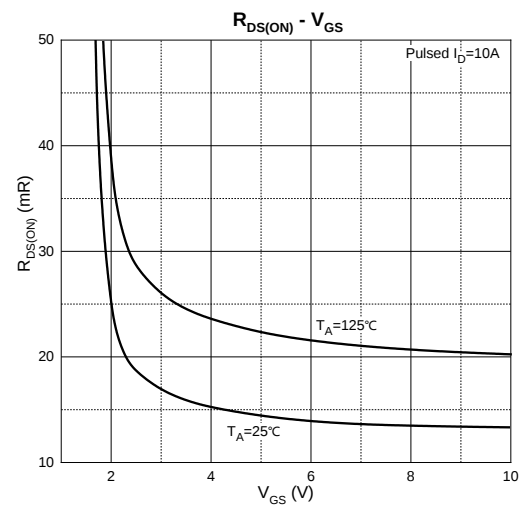
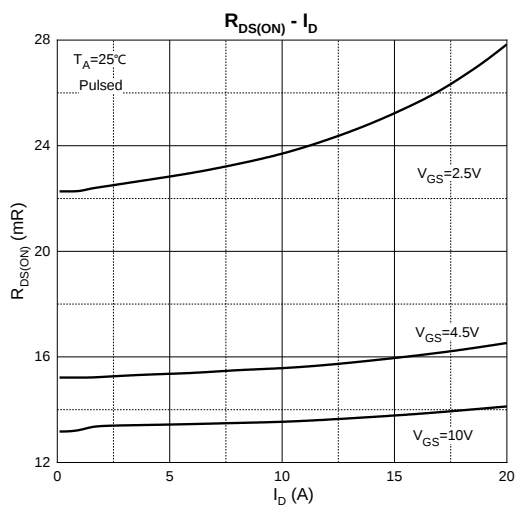
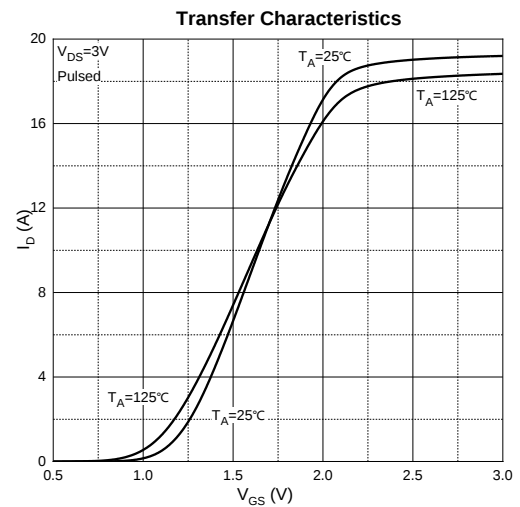
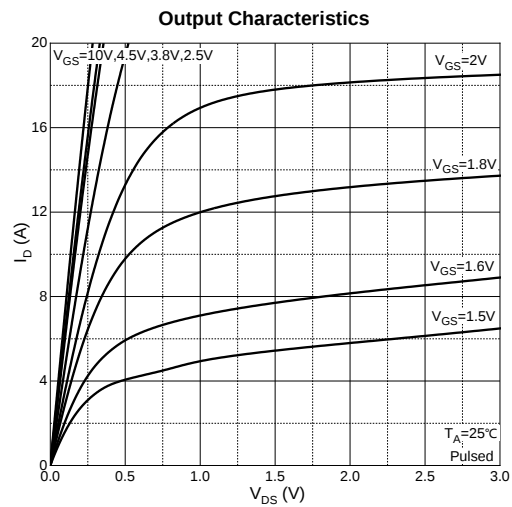
Notes :

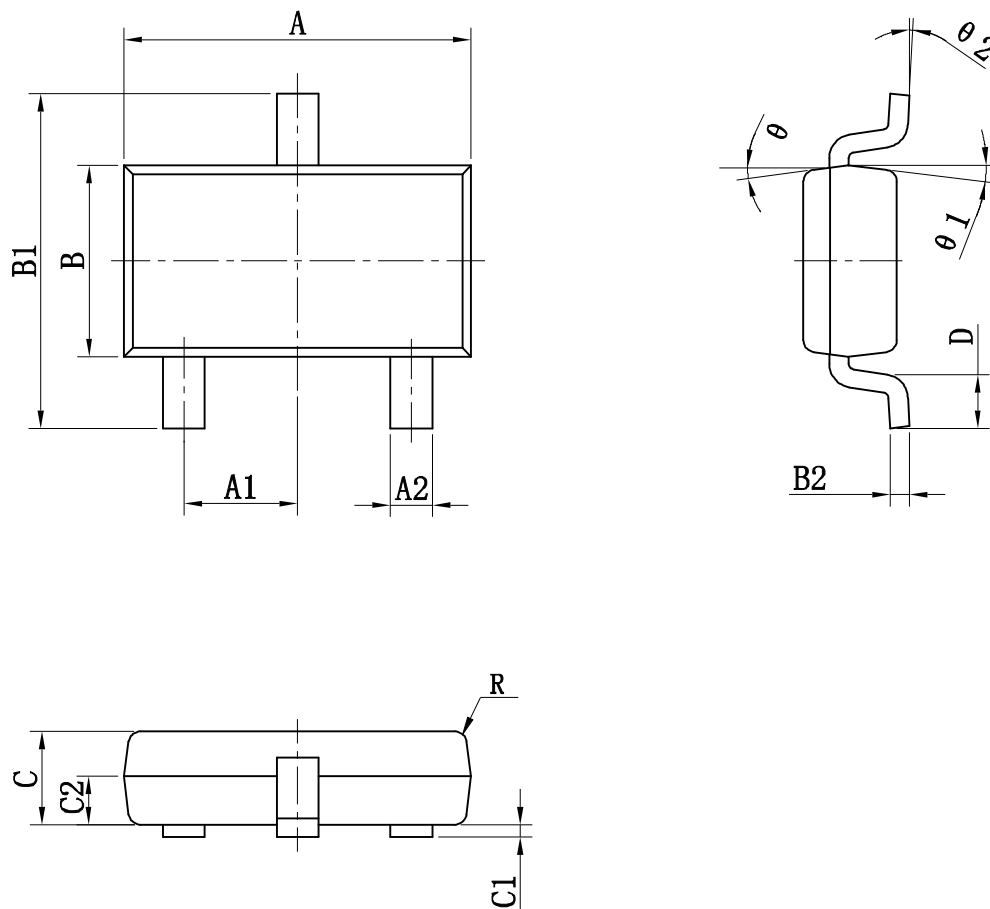
1. $R_{\theta JA}$ is measured with the device mounted on 1 in² FR4 board with 1oz. single side copper, in a still air environment with $T_a = 25^\circ\text{C}$.

2. $R_{\theta JA}$ is measured in the steady state

3. Pulse test : Pulse width $\leq 380\mu s$, duty cycle $\leq 2\%$.

Typical Characteristics



TSOT-23-3L Package Information


标注/ SYMBOL	尺寸/ SIZE	最小/MIN(mm)	最大/MAX (mm)	标注/ SYMBOL	尺寸/ SIZE	最小/MIN(mm)	最大/MAX (mm)
A		2.820	3.020	C1		0.000	0.100
A1		0.950 (BSC)		C2		0.378	0.438
A2		0.350	0.500	D		0.300	0.600
B		1.600	1.700	θ		9° TYP4	
B1		2.650	2.950	θ 1		10° TYP4	
B2		0.080	0.200	θ 2		0~8°	
C		0.700	0.800				