

Features

- Excellent $R_{DS(on)}$
- TrenchFET Power MOSFET
- High Power and Current Handling Capability
- Halogen-free Package
- Surface Mount Package

Applications

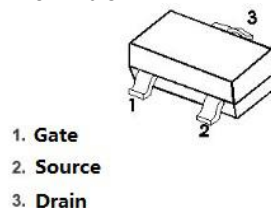
- Battery Switching
- DC/DC Converter

Marking: According to customer requirement

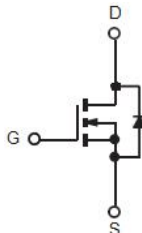
V_{DS}	60V
$R_{DS(on)}(@V_{GS}=10V)$	$<105m\Omega$
$R_{DS(on)}(@V_{GS}=4.5V)$	$<125m\Omega$

SOT-23

Pin Definition



Equivalent circuit



Maximum Ratings & Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

Parameters	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	3	A
Pulsed Drain Current (note 1)	I_{DM}	10	A
Maximum Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient (note 2)	$R_{\theta JA}$	357	°C/W
Junction and Storage Temperature	T_J, T_{STG}	-55~+150	°C

Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

Parameters	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	60			V
Zero gate voltage drain current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$			± 100	nA
Gate threshold voltage (note 3)	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5		2	V
Drain-source on-resistance (note 3)	$R_{DS(on)}$	$V_{GS}=10V, I_D=3A$			105	$m\Omega$
		$V_{GS}=4.5V, I_D=3A$			125	$m\Omega$
Forward transconductance (note 3)	g_{FS}	$V_{DS}=15V, I_D=2A$	1.4			S
Diode forward voltage (note 3)	V_{SD}	$I_S=3A, V_{GS}=0V$			1.2	V

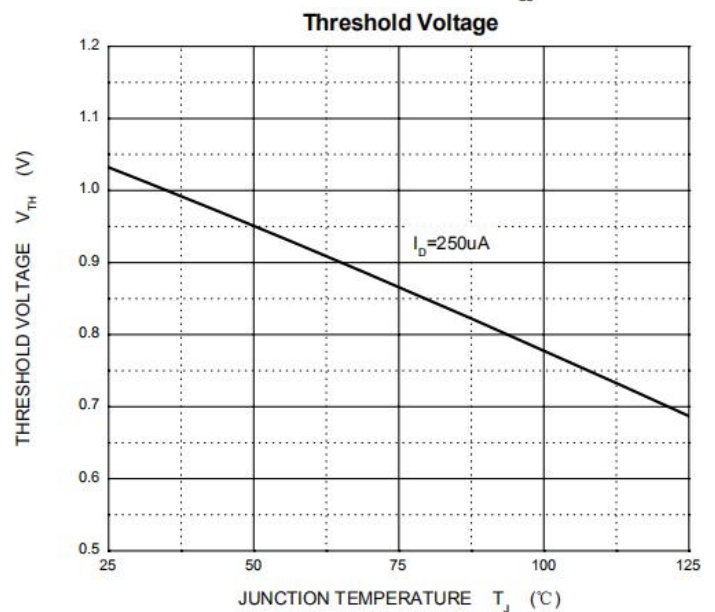
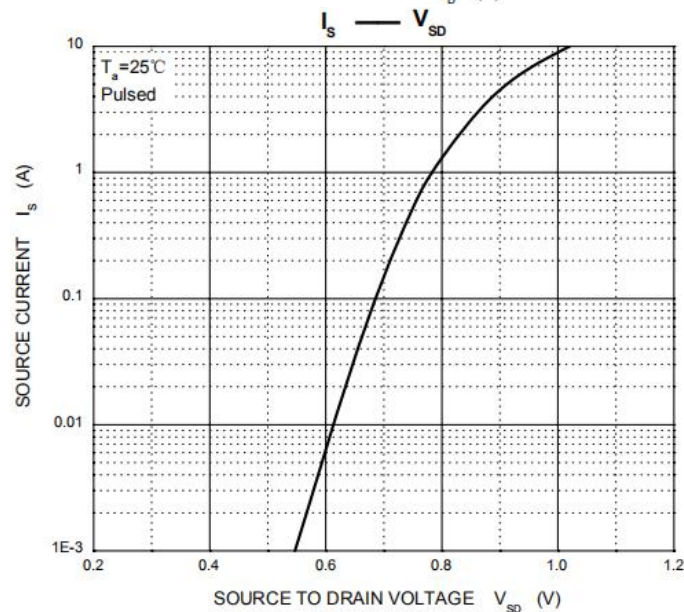
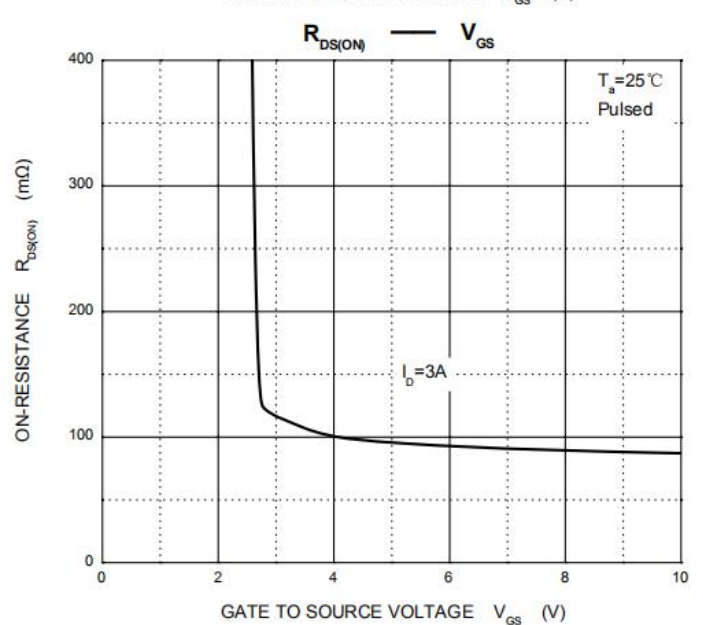
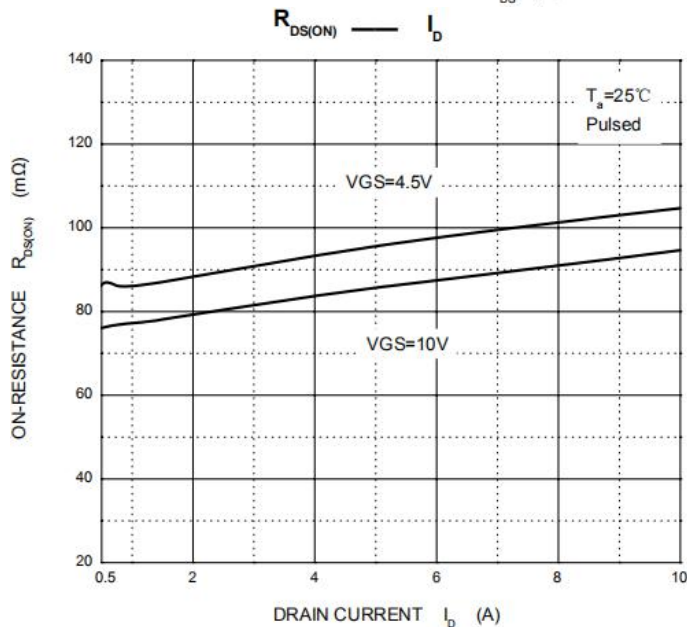
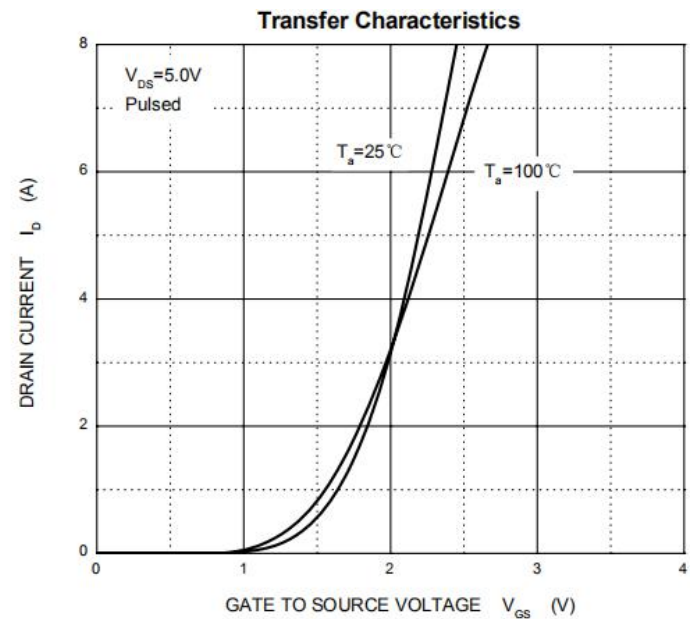
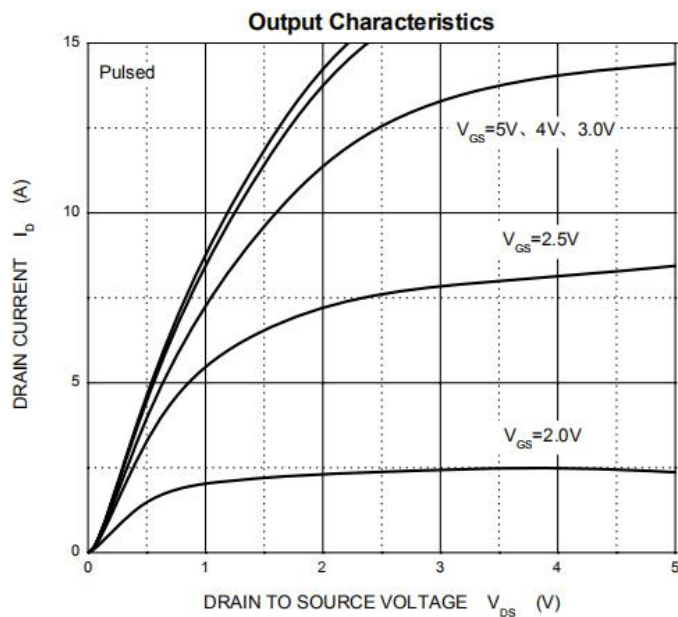


Dynamic Characteristics (note4)						
Input Capacitance	Ciss	V _{DS} =30V,V _{GS} =0V,f=1MHz		247		pF
Output Capacitance	Coss			34		pF
Reverse Transfer Capacitance	Crss			19.5		pF
Switching Characteristics (note 4)						
Turn-on delay time	td(on)	V _{DS} = 30 V,I _D =1.5A, V _{GS} =10V, R _{GEN} =1 Ω		6		ns
Turn-on rise time	tr			15		ns
Turn-off delay time	td(off)			15		ns
Turn-off fall time	tf			10		ns
Total Gate Charge	Q _g	V _{DS} =30V, V _{GS} = 4.5 V, I _D = 3A		6		nC
Gate-Source Charge	Q _{gs}			1		nC
Gate-Drain Charge	Q _{gd}			1.3		nC

***Notes :**

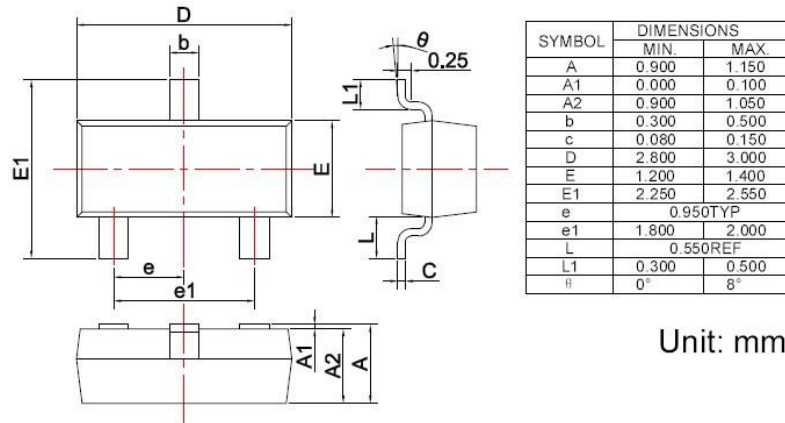
1. Repetitive rating: Pluse width limited by maximum junction temperature
2. Surface Mounted on FR4 board, t_≤10 sec.
3. Pulse test : Pulse width≤300μs, duty cycle≤2%.
4. Guaranteed by design, not subject to production.

Typical characteristics

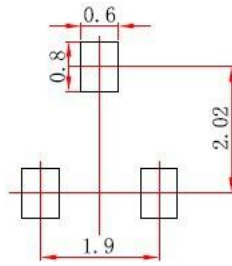




Package Outline Dimensions



Precautions: PCB Design



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