

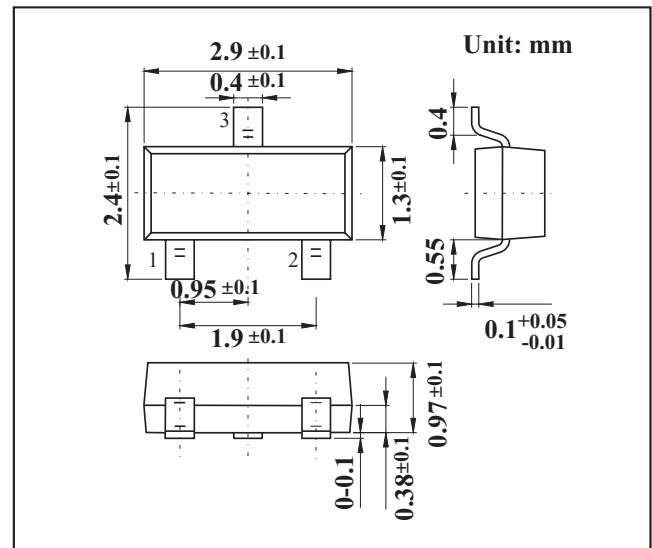
## SOT-23 Plastic-Encapsulate MOSFETS

### FEATURES

- Metal silicon junction, majority carrier conduction
- For surface mounted applications
- Low power loss, high efficiency
- High forward surge current capability
- For use in low voltage, high frequency inverters
- Free wheeling, and polarity protection applications

### MECHANICAL DATA

- Case style: SOT-23 molded plastic
- Mounting position: any



### MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	5 sec	Steady State	Unit
Drain-Source Voltage	VDS		-12	V
Gate-Source Voltage	VGS		±8	V
Continuous Drain Current (T <sub>J</sub> =150 °C) TA=25°C TA=70°C	ID	-3.85 -3.0	-3.0 -2.45	A
Pulsed Drain Current	IDM		-12	A
Continuous Source Current (diode conduction) *2	IS	-1.0	-0.62	A
Power Dissipation TA=25°C TA=70°C	PD	1.19 0.76	0.75 0.48	W
Junction Temperature	T <sub>j</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

\* Surface Mounted on FR4 Board.

### Thermal Resistance Ratings Ta = 25 °C

Parameter	Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient *1	R <sub>thJA</sub>	85	105	C/ W
Maximum Junction-to-Ambient *2 Steady State		130	166	
Maximum Junction-to-Foot (Drain) Steady State	R <sub>thJF</sub>	60	75	

\* 1. Surface Mounted on FR4 Board, t ≤ 5 s e c .

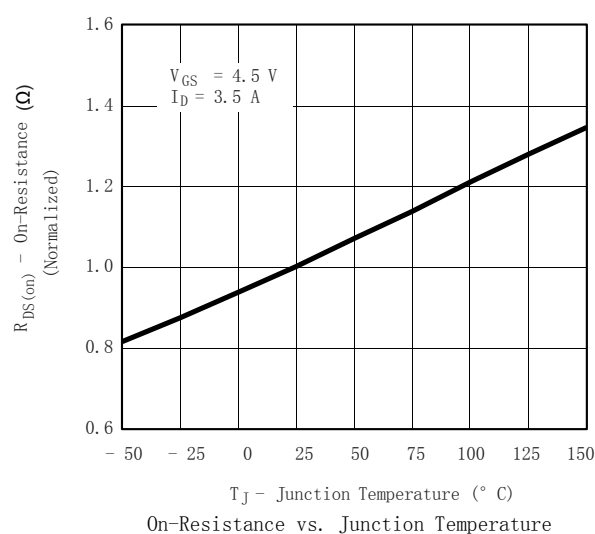
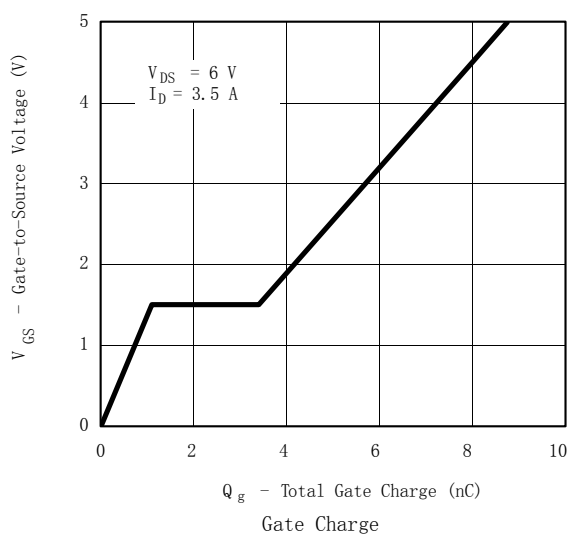
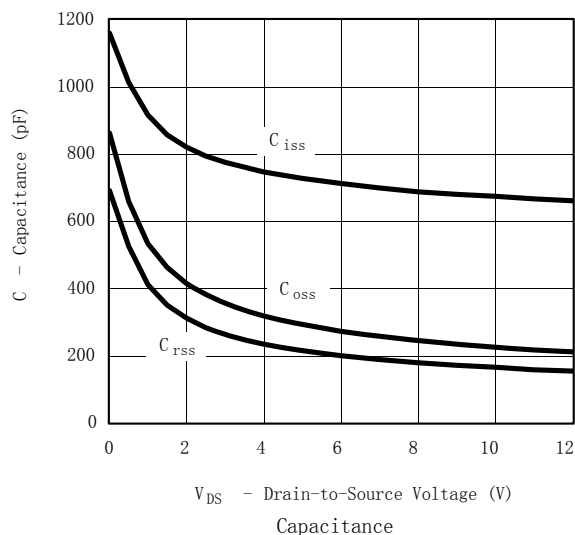
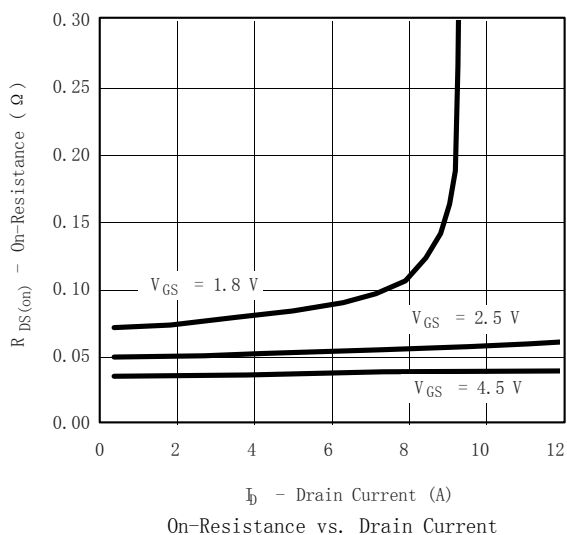
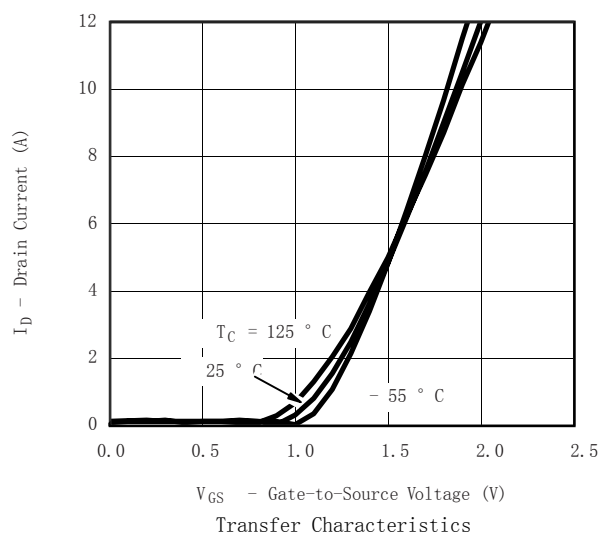
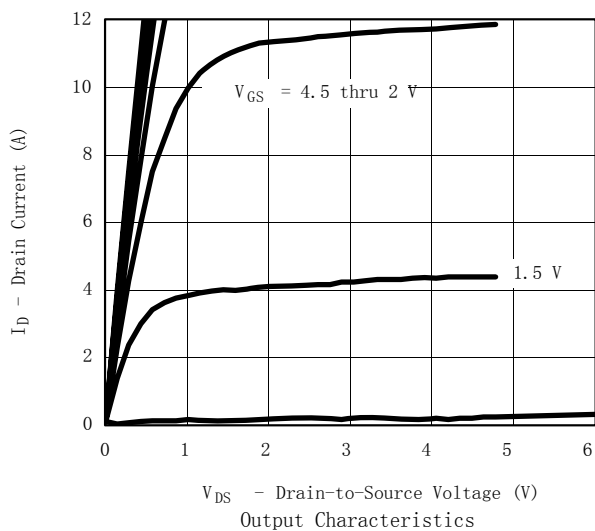
\* 2. Surface Mounted on FR4 Board.

**MOSFET ELECTRICAL CHARACTERISTICS** Ta=25 °C unless otherwise specified

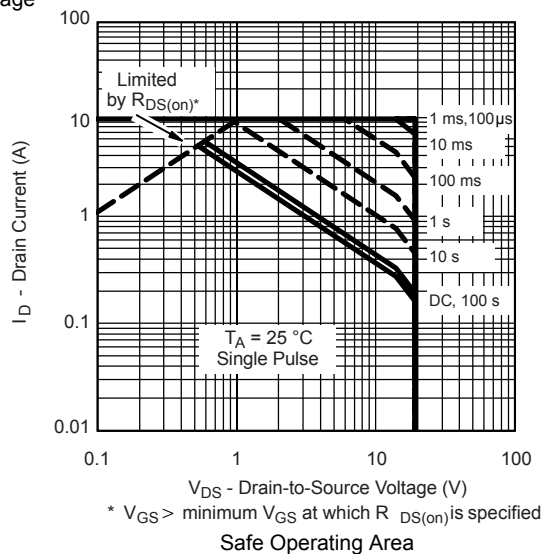
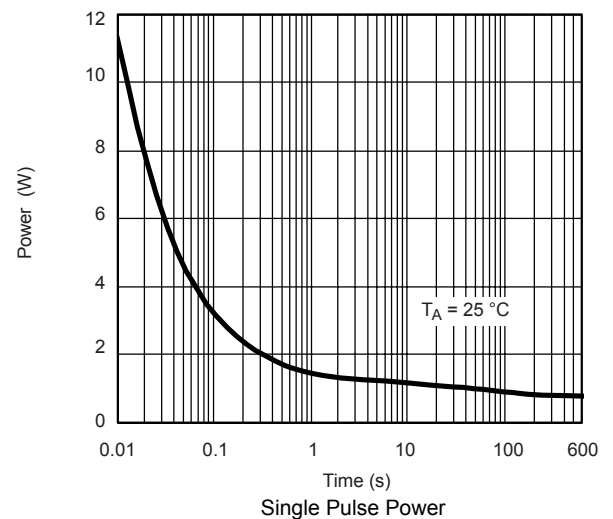
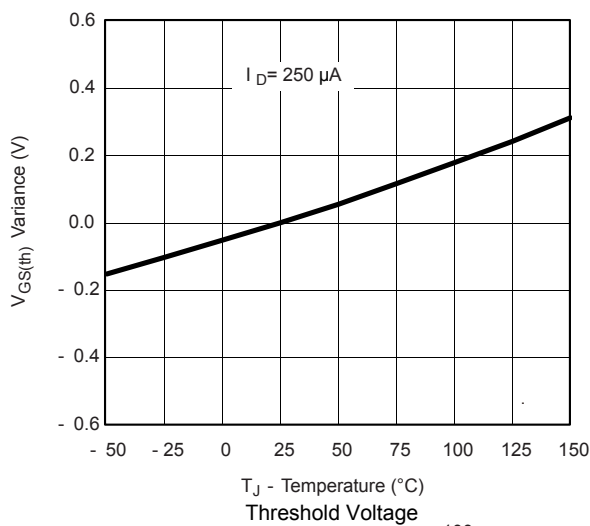
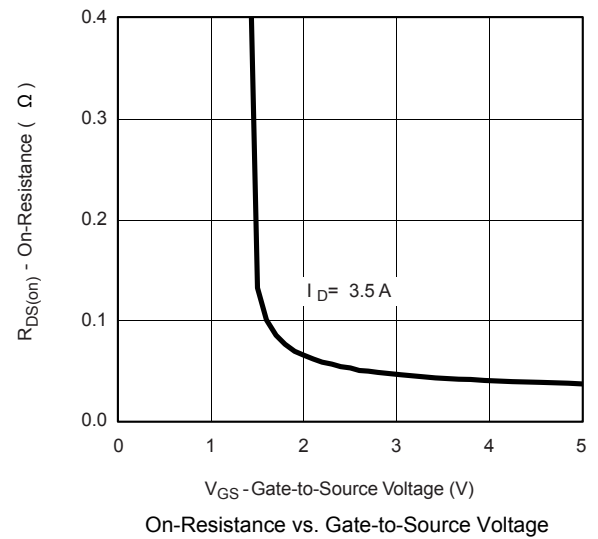
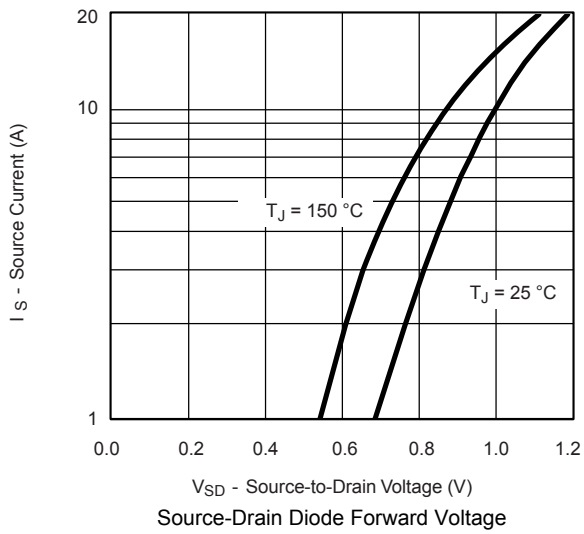
Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V(BR)DSS	VGS = 0 V, ID = -10 μA	-12			V
Gate Threshold Voltage	VGS(th)	VDS = VGS, ID = -250 μA	-0.45		-0.9	
Gate-Body Leakage	IGSS	VDS = 0 V, VGS = ±8 V			±100	nA
Zero Gate Voltage Drain Current	IDSS	VDS = -12 V, VGS = 0 V			-1	μA
		VDS = -12 V, VGS = 0 V, TJ = 55 °C			-10	
On-State Drain Current	ID(on)	VDS ≤ -5 V, VGS = -4.5 V	-6			A
		VDS ≤ -5 V, VGS = -2.5 V	-3			
Drain-Source On-State Resistance	RDS(on)	VGS = -4.5 V, ID = -3.85 A		0.040	0.050	Ω
		VGS = -2.5 V, ID = -3.4 A		0.05	0.065	
		VGS = -1.8V, ID = -2.7 A		0.071	0.100	
Forward Transconductance	gfs	VDS = -5 V, ID = -3.85 A		7		S
Diode Forward Voltage	VSD	IS = -1.6 A, VGS = 0 V			-1.2	V
Total Gate Charge	Qg	VDS = -6 V, VGS = -4.5 V, ID = -3.85 A		8	1	5 nC
Gate-Source Charge	Qgs			1.1		
Gate-Drain Charge	Qgd			2.3		
Input Capacitance	Ciss	VDS = -6 V, VGS = 0, f = 1 MHz		715		pF
Output Capacitance	Coss			275		
Reverse Transfer Capacitance	Crss			200		
Turn-On Time	td(on)	VDD = -6 V, RL = 6 Ω, ID = -1 A, VGEN = -4.5V, RG = 6 Ω		15	20	ns
	tr			35	50	
Turn-Off Time	td(off)			50	70	
	tf			50	75	

\* Pulse test: PW ≤ 300 μs duty cycle ≤ 2%.

## RATINGS AND CHARACTERISTIC CURVES



## RATINGS AND CHARACTERISTIC CURVES



## RATINGS AND CHARACTERISTIC CURVES

