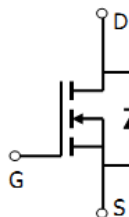
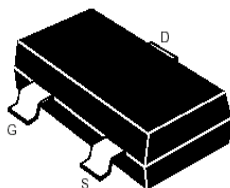


**SOT-23**

**Features**

- Advanced trench process technology
- High Density Cell Design For Ultra Low On-Resistance

**Maximum Ratings & Thermal Characteristics**

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

Parameter	Symbol	Limit	Unit	
Drain-Source Voltage	$V_{DS}$	20	V	
Gate-Source Voltage	$V_{GS}$	± 12		
Continuous Drain Current	$I_D$	3.6	A	
Pulsed Drain Current <sup>1)</sup>	$I_{DM}$	8		
Maximum Power Dissipation	$P_D$	TA = 25°C	1.25	W
		TA = 75°C	0.8	
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to 150	°C	
Junction-to-Ambient Thermal Resistance (PCB mounted) <sup>2)</sup>	$R_{\theta JA}$	78	°C/W	

**Notes**

- <sup>1)</sup> Pulse width limited by maximum junction temperature.
- <sup>2)</sup> Surface Mounted on FR4 Board,  $t \leq 5$  sec.

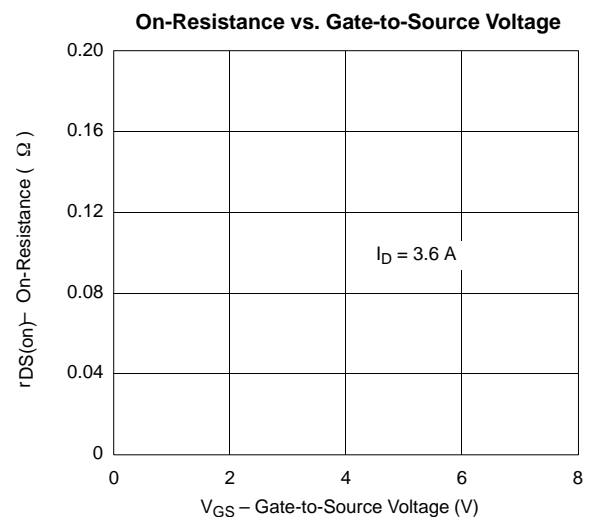
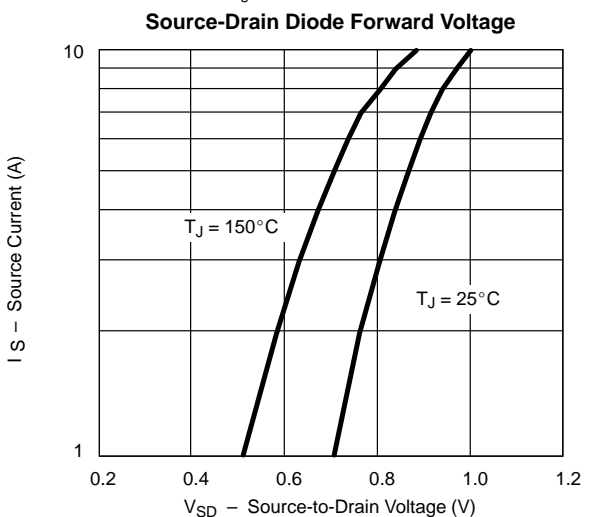
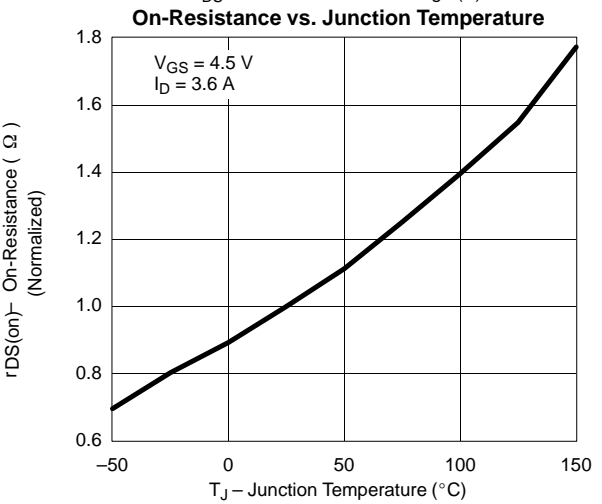
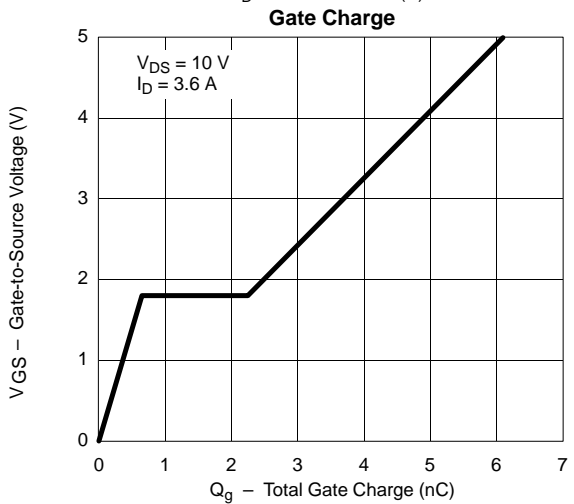
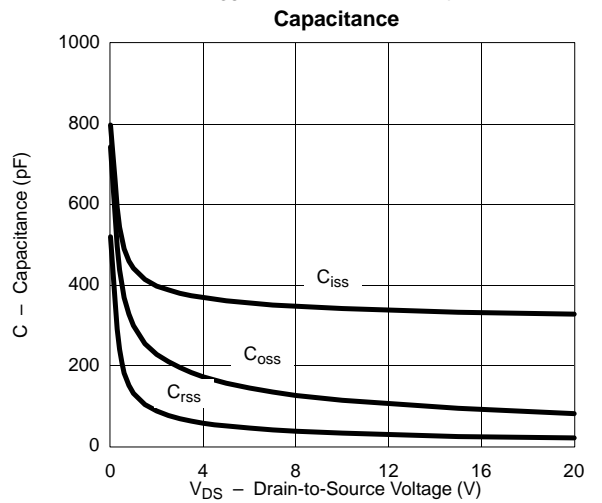
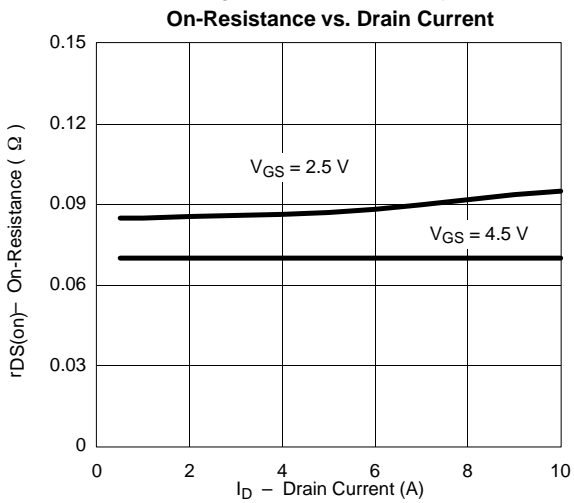
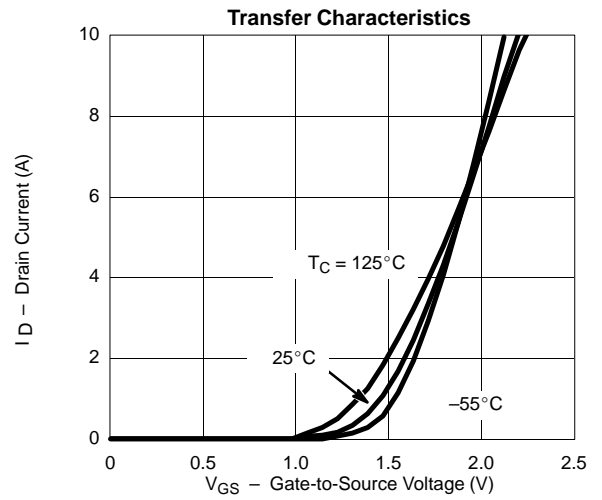
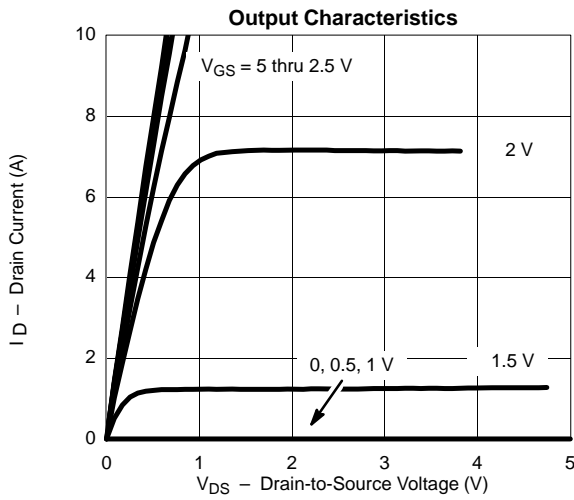
**Electrical Characteristics**

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

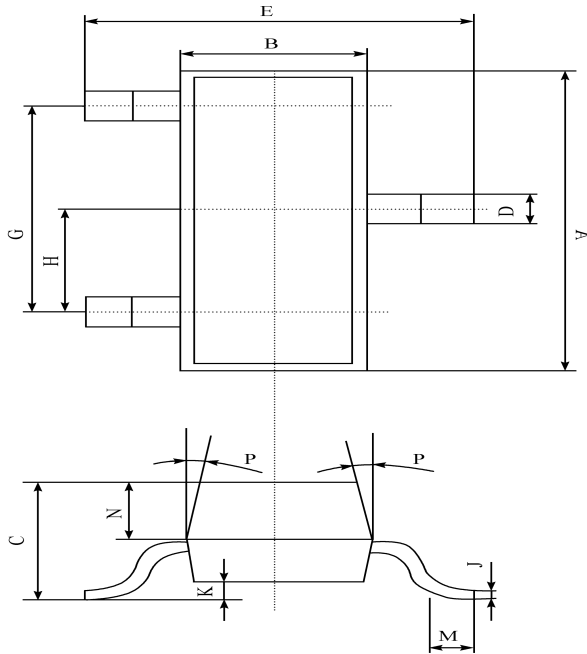
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static <sup>3)</sup></b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = 2.5V, I_D = 3.1A$		70.0	80.0	mΩ
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 3.6A$		60.0	70.0	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.6	0.76		V
Zero Gate Voltage Drain Current $I_0$	$I_{DSS}$	$V_{DS} = 20V, V_{GS} = 0V$			1	μA
Gate Body Leakage	$I_{GSS}$	$V_{GS} = \pm 12V, V_{DS} = 0V$			±100	nA
Forward Transconductance	$g_{fs}$	$V_{DS} = 5V, I_D = 4.2A$		5	—	S
<b>Dynamic <sup>4)</sup></b>						
Total Gate Charge	$Q_g$	$V_{DS} = 10V, I_D = 3.6A$ $V_{GS} = 4.5V$		5.4		nC
Gate-Source Charge	$Q_{gs}$			0.65		
Gate-Drain Charge	$Q_{gd}$			1.5		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 10V, R_G = 6\Omega$ $I_D = 1A, V_{GS} = 4.5V$ $RL = 5.5\Omega$		12		ns
Turn-On Rise Time	$t_r$			36		
Turn-Off Delay Time	$t_{d(off)}$			34		
Turn-Off Fall Time	$t_f$			10		
Input Capacitance	$C_{iss}$	$V_{DS} = 10V, V_{GS} = 0V$ $f = 1.0$ MHz		340		pF
Output Capacitance	$C_{oss}$			115		
Reverse Transfer Capacitance	$C_{rss}$			33		
<b>Source-Drain Diode</b>						
Max. Diode Forward Current	$I_S$				1.6	A
Diode Forward Voltage	$V_{SD}$	$I_S = 1.0A, V_{GS} = 0V$			1.0	V

**Notes**

- <sup>3)</sup> Short duration test pulse used to minimize self-heating effect.
- <sup>4)</sup> Pulse test pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ .



**SOT-23 PACKAGE OUTLINE** Plastic surface mounted package



SOT-23	
A	2.90 ± 0.10
B	1.30 ± 0.10
C	1.00 ± 0.10
D	0.40 ± 0.10
E	2.40 ± 0.20
G	1.90 ± 0.10
H	0.95 ± 0.05
J	0.13 ± 0.05
K	0.00-0.10
M	≥ 0.2
N	0.60 ± 0.10
P	7 ± 2°

(UNIT): mm