



## 60V N-Channel MOSFET

### ● Features

60V/3.5A ,

$R_{DS(ON)} < 100m\Omega @ V_{GS} = 10V$

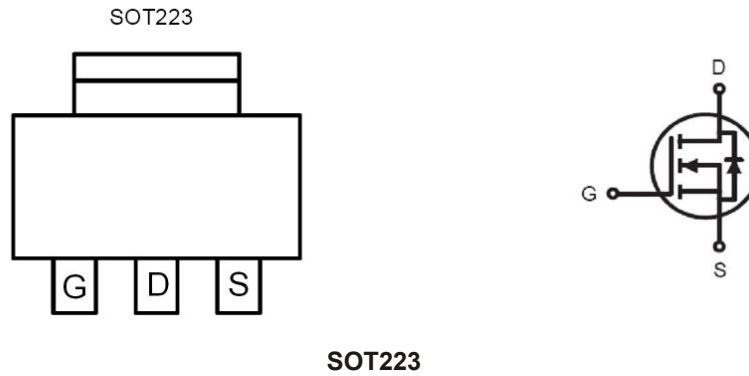
$R_{DS(ON)} < 130m\Omega @ V_{GS} = 4.5V$

Lead Free Available (RoHS Compliant)

### ● General Description

The FS2244S combines advanced trench MOSFET technology with a low resistance package to provide extremely low  $R_{DS(ON)}$ . this device is well suited for high current load applications.

### ● Pin Configuration



### ● Absolute Maximum Ratings $T_A=25^\circ C$ unless otherwise noted

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	$V_{DS}$	60	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	
Continuous Drain Current( $T_J=150^\circ C$ ) <sup>a</sup>	$I_D$	$T_A=25^\circ C$	A
		$T_A=70^\circ C$	
Pulsed Drain Current <sup>b</sup>	$I_{DM}$	15	mJ
Avalanche Current <sup>b</sup>	$I_{AS}$	15	
Avalanche energy	$E_{AS}$	15	
Power Dissipation <sup>a</sup>	$P_D$	$T_A=25^\circ C$	W
		$T_A=70^\circ C$	
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to 150	$^\circ C$

#### Notes

a. Surface Mounted on 1x1FR4 Board.

b. Pulse width limited maximum junction temperature



● Electrical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise noted)

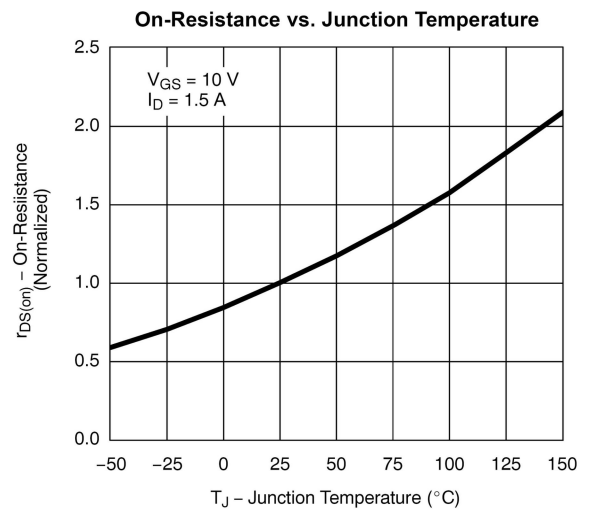
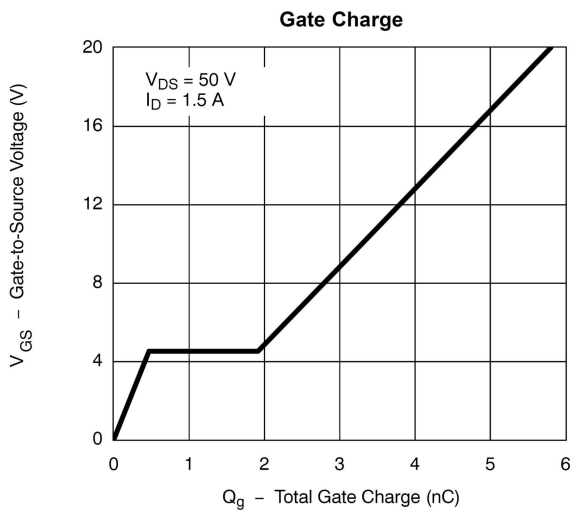
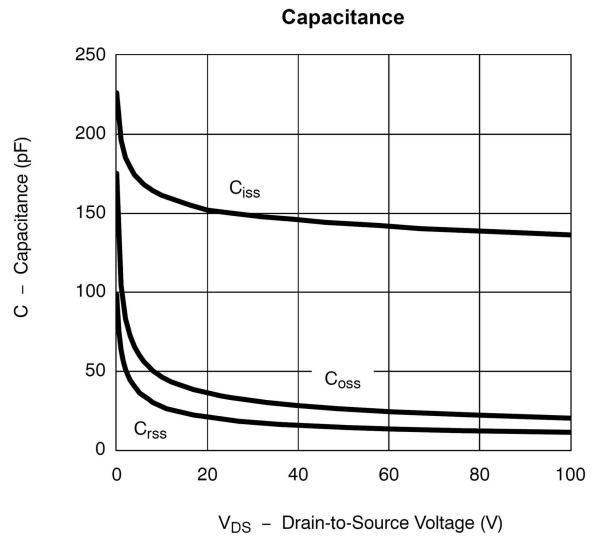
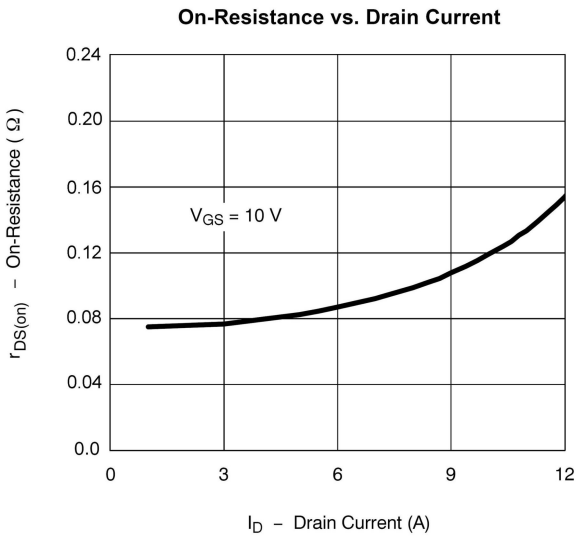
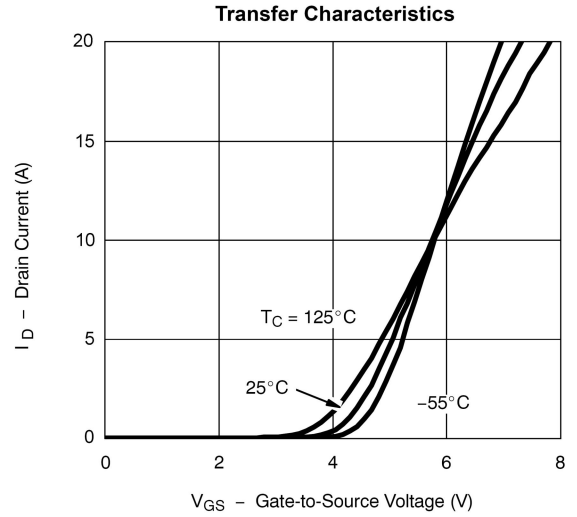
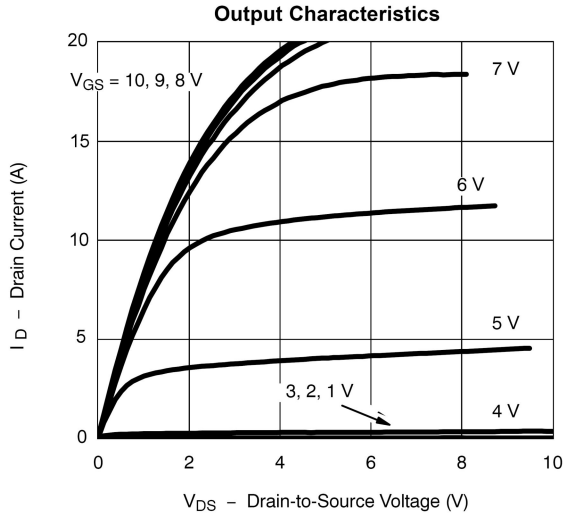
Symbol	Parameter	Conditions	Min	Typ	Max	Units
<b>STATIC PARAMETERS</b>						
$BV_{DSS}$	Drain-Source Breakdown Voltage	$I_D=1\text{mA}, V_{GS}=0\text{V}$	60			V
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=60\text{V}, V_{GS}=0$	$T_A=25^\circ\text{C}$		1	$\mu\text{A}$
			$T_A=70^\circ\text{C}$		60	
$I_{GSS}$	Gate-Body leakage current	$V_{DS}=0\text{V}, V_{GS}=\pm 20\text{V}$			$\pm 0.1$	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	1		3	V
$I_{D(ON)}$	On state drain current <sup>a</sup>	$V_{GS}=10\text{V}, V_{DS}\geq 15\text{V}$	10.8			A
$R_{DS(ON)}$	Static Drain-Source On-Resistance <sup>a</sup>	$V_{GS}=10\text{V}, I_D=3.5\text{A}$		82	100	$\text{m}\Omega$
		$V_{GS}=4.5\text{V}, I_D=2.6\text{A}$		96	130	
$g_{FS}$	Forward Trans conductance <sup>a</sup>	$V_{DS}=15\text{V}, I_D=5\text{A}$		6.5		S
$V_{SD}$	Diode Forward Voltage	$I_S=10\text{A}, V_{GS}=0\text{V}$	0.8		1.2	V
$I_S$	Maximum Body-Diode Continuous Current				1.2	A
<b>Dynamic<sup>b</sup></b>						
$Q_g$	Total Gate Charge	$V_{GS}=4.5\text{V}, V_{DS}=30\text{V}, I_D=3.5\text{A}$		12		$\text{nC}$
$Q_{gs}$	Gate - Source Charge			2.2		
$Q_{gd}$	Gate - Drain Charge			2.7		
$R_g$	Gate resistance	$V_{GS}=0\text{V}, V_{DS}=0\text{V}, f=1\text{MHz}$		0.7		$\Omega$
<b>Switching</b>						
$t_{D(on)}$	Turn-On Delay Time	$V_{GS}=10\text{V}, V_{DS}=20\text{V}, R_L=20\Omega,$ $R_{GEN}=1\Omega, I_D=1\text{A}$		10		$\text{ns}$
$t_r$	Turn-On Rise Time			11		
$t_{D(off)}$	Turn-Off Delay Time			29		
$t_f$	Turn-Off Fall Time			3		
$t_{rr}$	Body Diode Reverse Recovery Time	$I_F=3\text{A}, dI/dt=100\text{A}/\mu\text{s}$		20		

## Notes

- a. Pulse test:  $PW \leq 300 \mu\text{s}$  duty cycle  $\leq 2\%$
- b. Guaranteed by design, not subject to production testing.
- c. Forsemi reserves the right to improve product design, functions and reliability without notice.



● TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)





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