



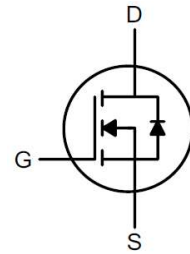
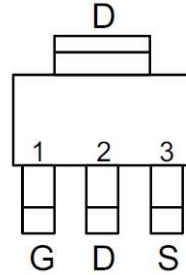
SM2614FSEH

N-Channel Enhancement Mode Field Effect Transistor

FEATURES

- $R_{DS(ON)} \leq 166m\Omega @ V_{GS}=10V$
- $R_{DS(ON)} \leq 213m\Omega @ V_{GS}=4.5V$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Suffix "H" indicates Halogen-free parts, ex. SM2614FSEH

PIN CONFIGURATION



Pin	Description
1	Gate
2	Source
3	Drain

Maximum Ratings ($T_A=25\text{ }^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit	
Drain-Source Voltage	V_{DS}	100	V	
Gate-Source Voltage	V_{GS}	± 20		
Continuous Drain Current	I_D	$T_A=25\text{ }^\circ\text{C}$	3.3	A
		$T_A=70\text{ }^\circ\text{C}$	2.6	
Pulsed Drain Current	I_{DM}	13	A	
Maximum Power Dissipation	P_D	$T_A=25\text{ }^\circ\text{C}$	2.9	W
		$T_A=70\text{ }^\circ\text{C}$	1.9	
Maximum Thermal Junction to Ambient (Note 1)	$R_{\theta JA}$	42	$^\circ\text{C}/\text{W}$	
Operating Junction and Storage Temperature Range	T_j, T_{stg}	- 55 to + 150	$^\circ\text{C}$	

Note:

1. The device mounted on 1in2 FR4 board with 2 oz copper



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

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	$V_{(BR)DSS}$	100	-	-	V
Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{GS(th)}$	1.0	-	3.0	V
Gate Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$	I_{GSS}	-	-	± 100	nA
Zero Gate Voltage Drain Current	$V_{DS}=80V, V_{GS}=0V$	I_{DSS}	-	-	1	μA
Drain-Source On-Resistance (Note 2)	$V_{GS}=10V, I_D=3A$	$R_{DS(on)}$	-	140	166	m Ω
	$V_{GS}=4.5V, I_D=2.4A$		-	165	213	
Dynamic						
Total Gate Charge	$V_{DS}=80V, V_{GS}=10V, I_D=2.5A$	Q_g	-	19.2	-	nC
			-	11.2	-	
Gate-Source Charge	$V_{DS}=80V, V_{GS}=4.5V, I_D=2.5A$	Q_{gs}	-	3.4	-	pF
Gate-Drain Charge		Q_{gd}	-	6.1	-	
Input Capacitance		C_{iss}	-	849	-	
Output Capacitance	$V_{DS}=15V, V_{GS}=0V, f=1.0MHz$	C_{oss}	-	57	-	pF
Reverse Transfer Capacitance		C_{rss}	-	44	-	
Turn on Delay Time	$V_{DS}=50V, R_L=10\Omega, V_{GS}=10V, R_G=6\Omega, I_D=5A$	$t_{d(on)}$	-	12.6	-	nS
Turn on Rise Time		t_r	-	6.0	-	
Turn off Delay Time		$t_{d(off)}$	-	32.5	-	
Turn off Fall Time		t_f	-	4.3	-	
Drain-Source Body Diode						
Diode Forward Voltage	$V_{GS}=0V, I_S=2.5A$	V_{SD}	-	0.8	1.2	V

Note:

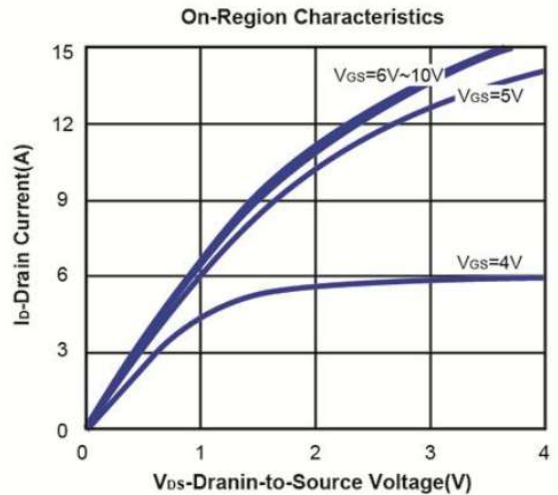
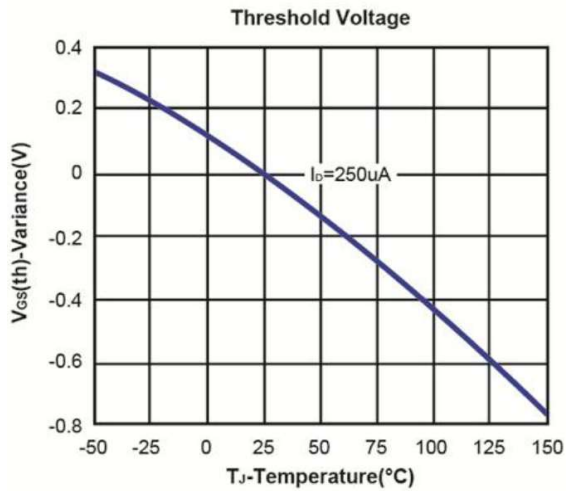
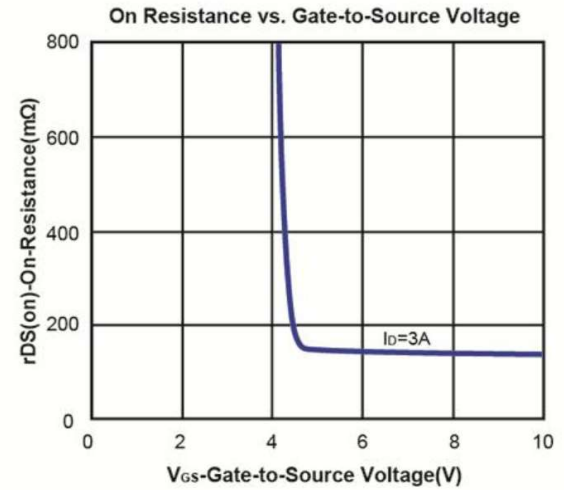
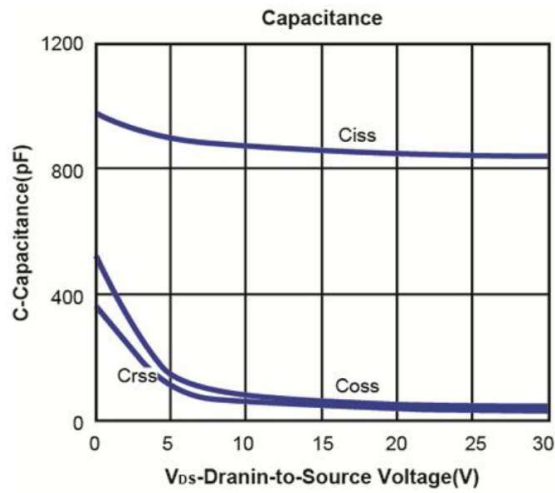
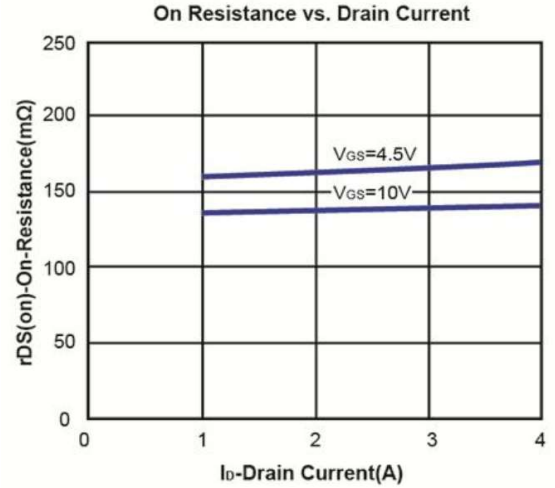
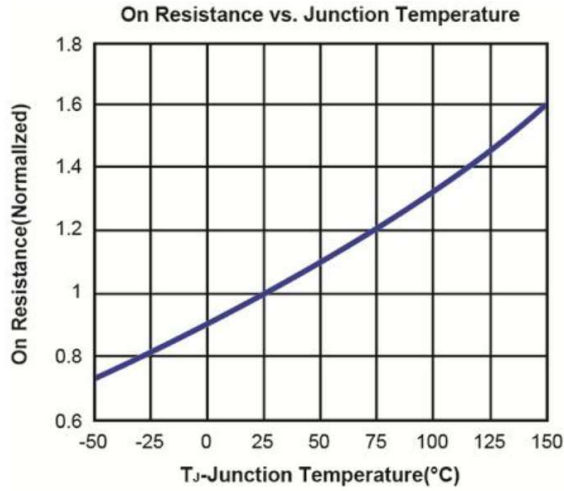
2. Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$, Guaranteed by design, not subject to production testing.



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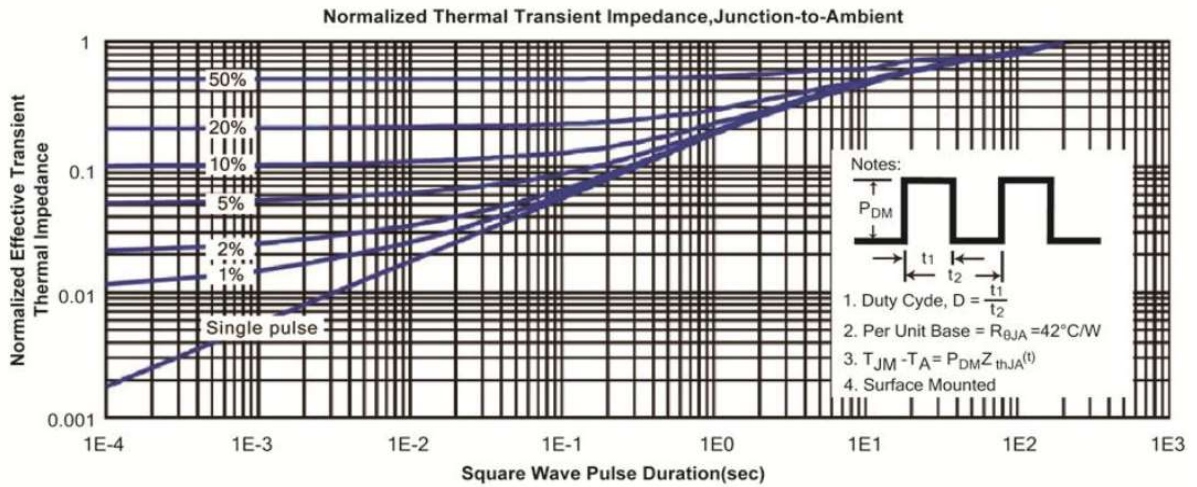
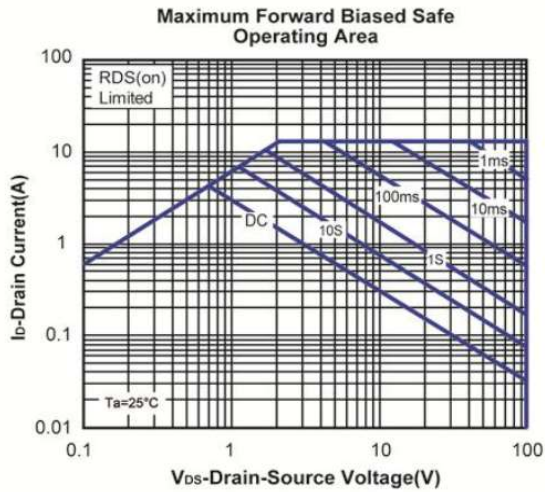
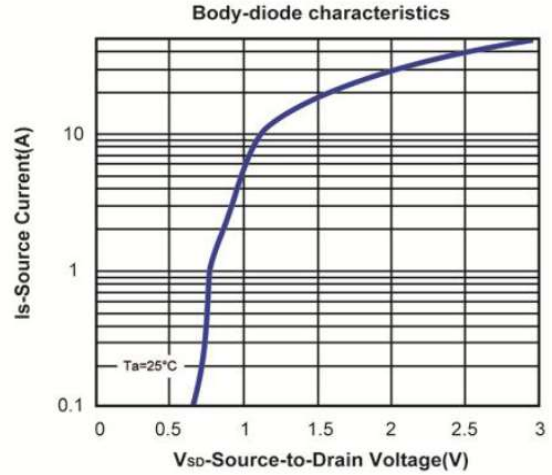
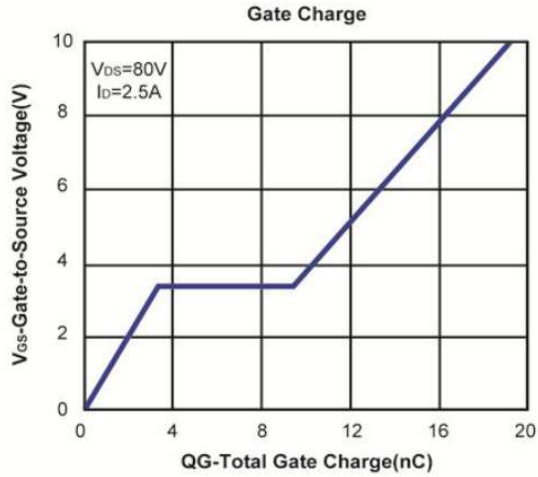
RATINGS AND CHARACTERISTIC CURVES





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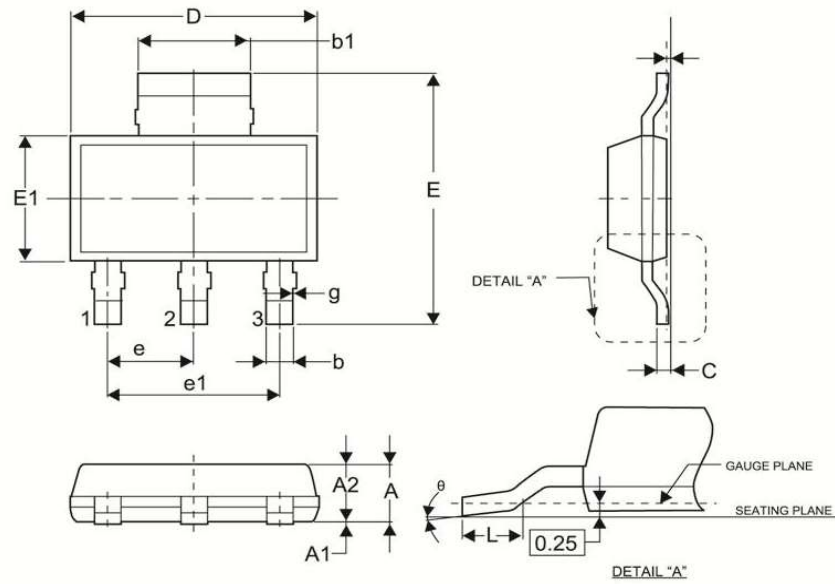


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Package Dimension

SOT-223



Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	-	1.80	-	0.071
A1	0.02	0.10	0.001	0.004
A2	1.50	1.70	0.059	0.067
b	0.66	0.84	0.026	0.033
b1	2.90	3.10	0.114	0.122
g	-	0.06	-	0.002
C	0.23	0.35	0.009	0.014
D	6.30	6.70	0.248	0.264
E	6.70	7.30	0.264	0.287
E1	3.30	3.70	0.130	0.146
e	BSC. 2.30		BSC. 0.091	
e1	BSC. 4.60		BSC. 0.181	
L	0.81	-	0.032	-
θ	0°	10°	0°	10°