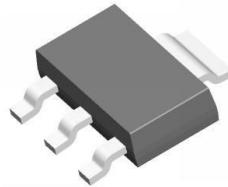
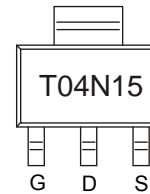


Main Product Characteristics

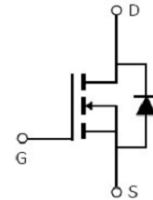
V_{DSS}	150V
$R_{DS(on)}$	130m Ω (typ.)
I_D	4A



SOT-223



Marking and Pin Assignment



Schematic Diagram

Features and Benefits

- Advanced MOSFET process technology
- Ideal for PWM, load switching and general purpose applications
- Low on-resistance with low gate charge
- Fast switching and reverse body recovery



Description

The SSFT04N15 utilizes the latest techniques to achieve high cell density, low on-resistance and high repetitive avalanche rating. These features make this device extremely efficient and reliable for use in PWM, load switching and a wide variety of other applications.

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	150	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	4	A
Pulsed Drain Current (note1)	I_{DM}	16	
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	125	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	
Maximum Lead Temperature for Soldering Purposes (1/8" from case for 5 seconds)	T_L	260	

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

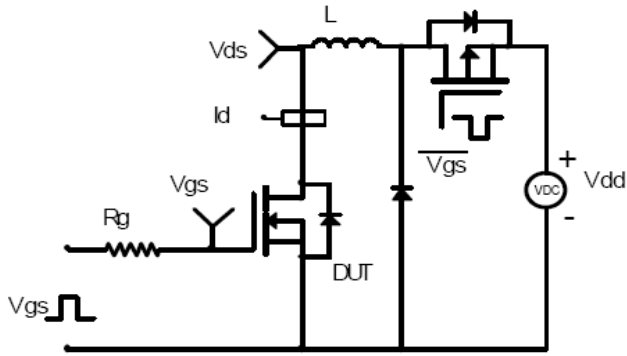
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	150	-	-	V
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS} = 0V, I_S = 2.0A$	-	-	1.2	
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 150V, V_{GS} = 0V$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$	-	-	± 100	nA
On Characteristics						
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.5	2.0	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 4.0A$	-	130	160	m Ω
Forward Transconductance	g_{fs}	$V_{DS} = 15V, I_D = 4A$	5	-	-	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$	-	900	-	pF
Output Capacitance	C_{oss}		-	115	-	
Reverse Transfer Capacitance	C_{rss}		-	70	-	
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 75V, V_{GS} = 10V, I_D = 1.5A$	-	19	-	nC
Gate-Source Charge	Q_{gs}		-	5.5	-	
Gate-Drain Charge	Q_{gd}		-	7	-	
Turn-on Delay Time	$t_{d(on)}$	$V_{DS} = 75V, V_{GS} = 10V,$ $R_G = 6\Omega, I_D = 1.0A, R_L = 75\Omega$	-	8	-	ns
Turn-on Rise Time	t_r		-	10	-	
Turn-off Delay time	$t_{d(off)}$		-	20	-	
Turn-off Fall Time	t_f		-	15	-	

Notes :

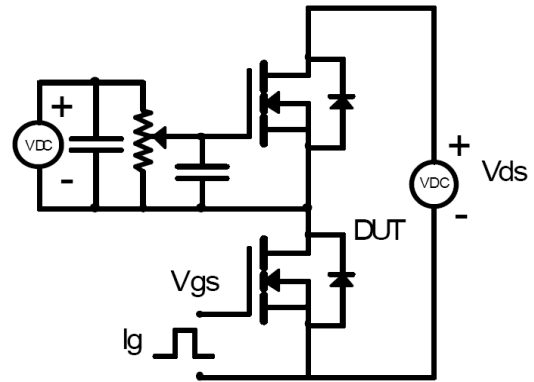
1. Repetitive Rating: Pulse width limited by maximum junction temperature.

Test Circuits and Waveforms

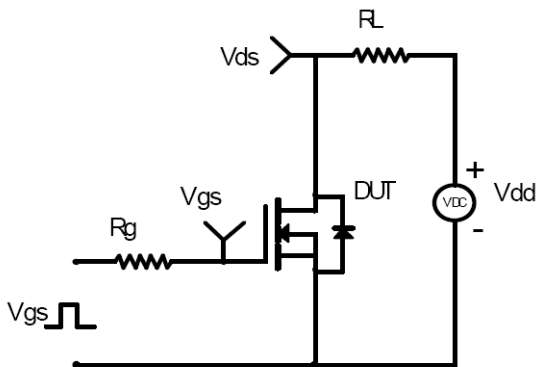
EAS Test Circuit



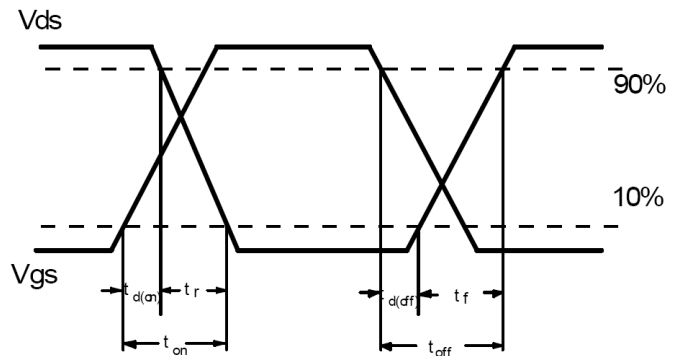
Gate charge test circuit



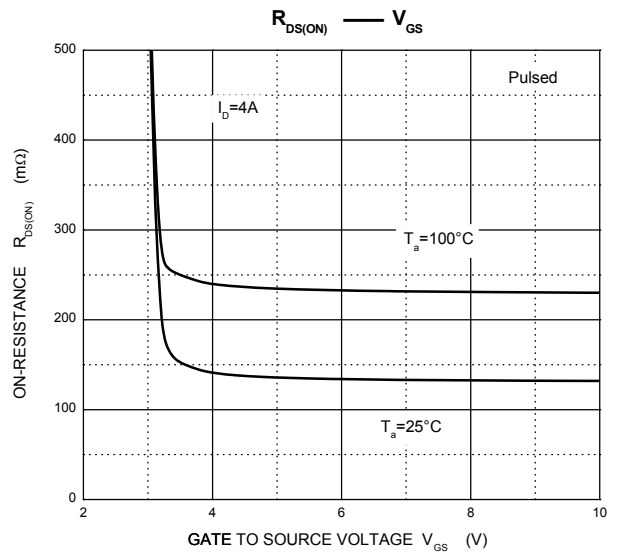
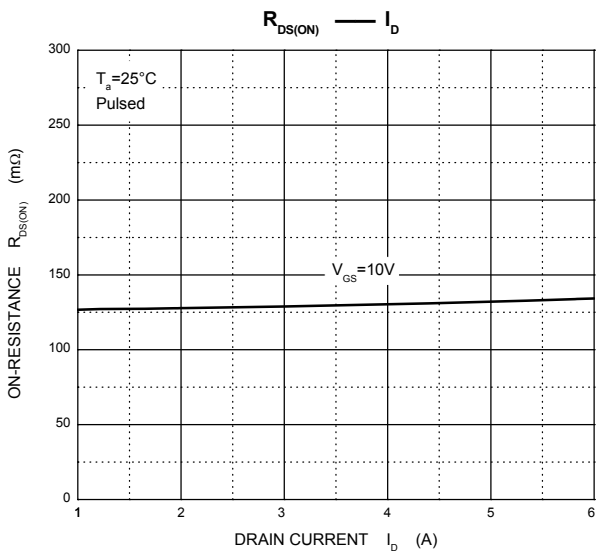
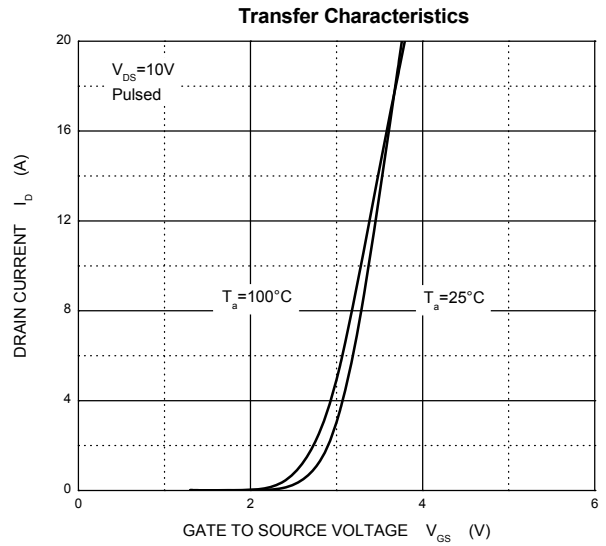
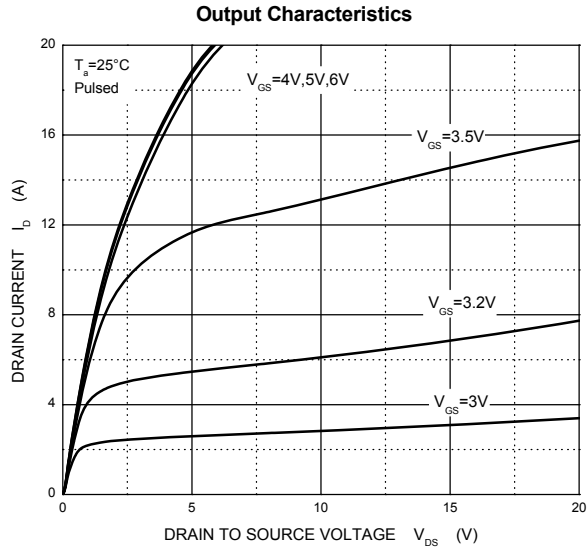
Switching Time Test Circuit



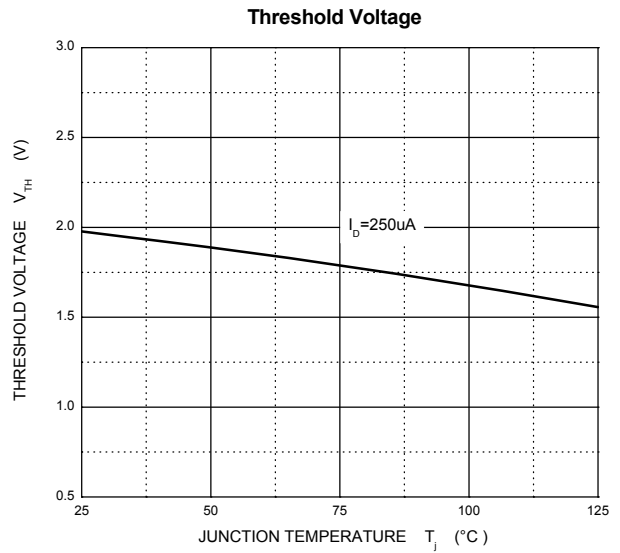
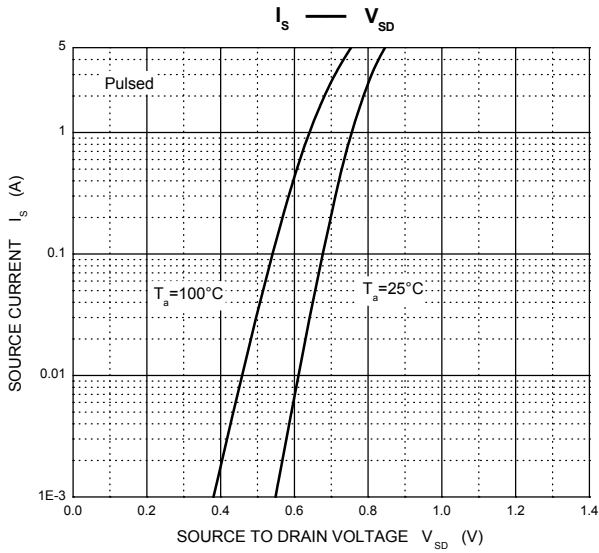
Switching Waveforms



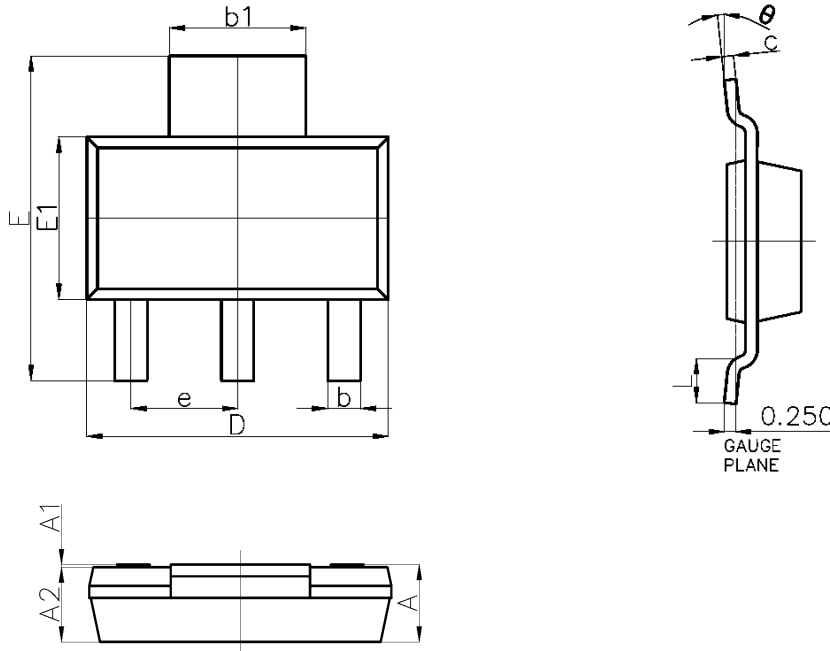
Typical Electrical and Thermal Characteristics



Typical Electrical and Thermal Characteristics

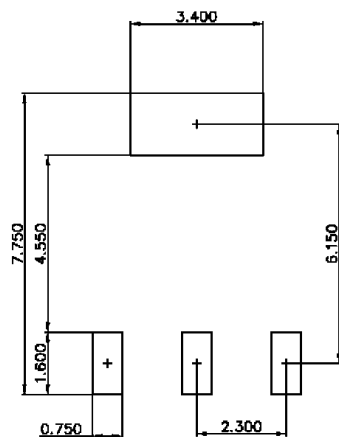


Package Outline Dimensions SOT-223



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	—	1.800	—	0.071
A1	0.020	0.100	0.001	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.840	0.026	0.033
b1	2.900	3.100	0.114	0.122
c	0.230	0.350	0.009	0.014
D	6.300	6.700	0.248	0.264
E	6.700	7.300	0.264	0.287
E1	3.300	3.700	0.130	0.146
e	2.300(BSC)		0.091(BSC)	
L	0.750	—	0.030	—
θ	0°	10°	0°	10°

Suggested Pad Layout



Note:
 1. Controlling dimension: in millimeters.
 2. General tolerance: ±0.050mm.
 3. The pad layout is for reference purposes only.

Order Information

Device	Package	Marking Code	Carrier	Quantity	HSF Status
SSFT04N15	SOT-223	T04N15	Tape & Reel	2500/Reel	RoHS Compliant