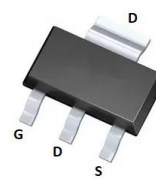


Features

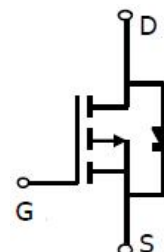
- Low $R_{DS(on)}$ @ $V_{GS} = -10V$
- -3.3V Logic Level Control



SOT223

Applications

- Load Switch
- Switching circuits
- High-speed line driver
- Power Management Functions



Absolute Ratings ($T_c = 25^\circ C$)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	-30	V
Drain Current -continuous	I_D	-4	A
Drain Current -continuous	$I_D(70^\circ C)$	-3.2	
Drain Current - pulse	I_{DM}	-16	A
Gate-Source Voltage	V_{GSS}	± 12	V
Power Dissipation	PD	1.2	W
Operating and Storage Temperature Range	T_j, T_{STG}	-55~+150	$^\circ C$
Maximum Lead Temperature for Soldering Purposes	T_L	300	$^\circ C$

*Drain current limited by maximum junction temperature

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

Parameter	Symbol	Tests conditions	Min	Type	Max	Units
Off-Characteristics						
Drain-Source Voltage	BV_{DSS}	$I_D = 250\mu A, V_{GS} = 0V$	-30	-	-	V
Drain cut-off current	I_{DSS}	$V_{DS} = -30V, V_{GS} = 0V$	-	-	-1	μA
Gate-body leakage current, forward	I_{GSSF}	$V_{DS} = 0V, V_{GS} = 12V$	-	-	100	nA
Gate-body leakage current, reverse	I_{GSSR}	$V_{DS} = 0V, V_{GS} = -12V$	-	-	-100	nA
On-Characteristics						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.5	-0.8	-1.2	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = -4A$	-	43	55	m Ω

Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =-4.5V,I _D =-3A	-	50	60	mΩ
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =-3.3V,I _D =-3A	-	58	75	mΩ
Dynamic Characteristics						
Input capacitance	Ciss	VDS=-15V, VGS=0V, f=1.0MHZ		604		pF
Output capacitance	Coss			63		pF
Reverse transfer capacitance	Crss			51		pF
Switching Characteristics						
Turn-On delay time	td(on)	V _{DD} =-15V,I _D =2A., R _G =3.3Ω		7		ns
Turn-On rise time	t _r			3.9		ns
Turn-Off delay time	T _{d(off)}			33		ns
Turn-Off Fall time	t _f			10.2		ns
Total Gate Charge	Qg	V _{DS} =-15V, I _D =-4A, V _{GS} =-4.5V		7.2		nC
Gate-Source charge	Qgs			1.5		nC
Gate-Drain charge	Qgd			2.6		nC
Drain-Source Diode Characteristics and Maximum Ratings						
Drain-Source Diode Forward Voltage	V _{SD}	VGS=0V,IS=-4A	-	-	-1.2	V
Maximum Continuous Drain-Source Diode Forward Current	I _s		-	-	-2	A

Thermal Characteristic

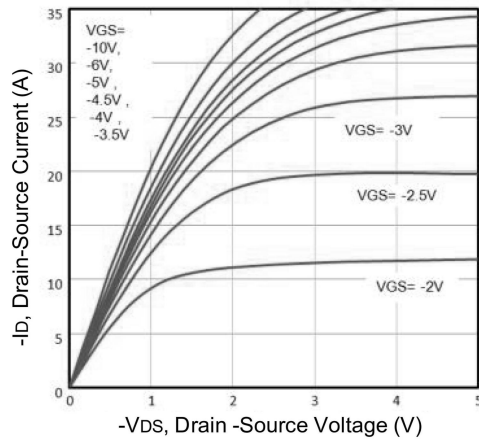
Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	80	

Notes:

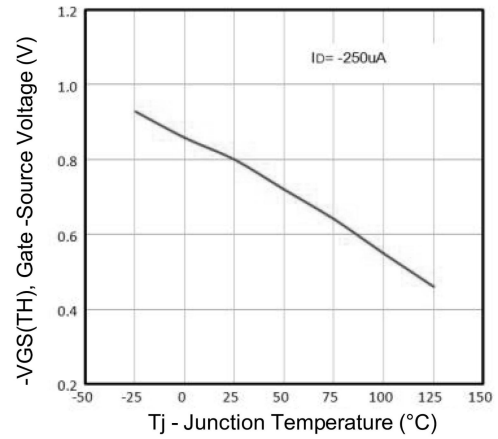
1. Pulse width limited by maximum junction temperature
2. Pulse test ; Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

Typical Electrical and Thermal Characteristics (Curves)

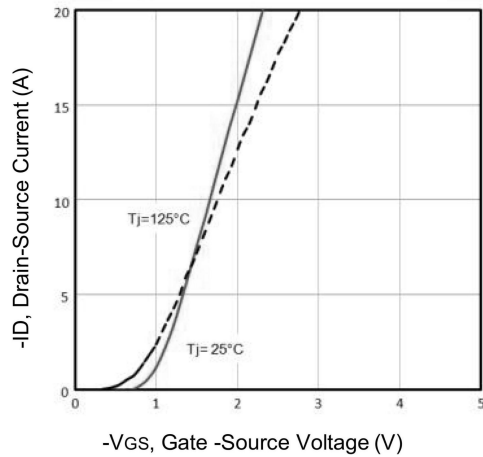
Typical Output Characteristics



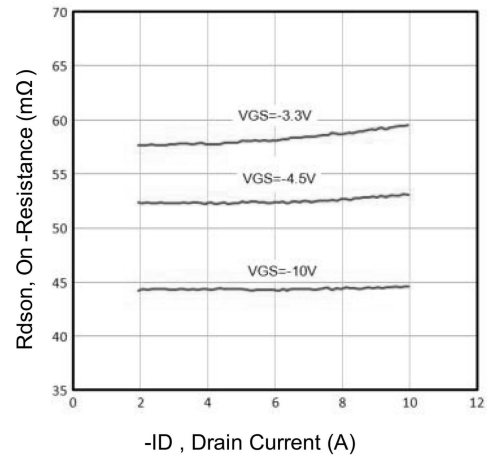
Normalized Threshold Voltage Vs. Temperature



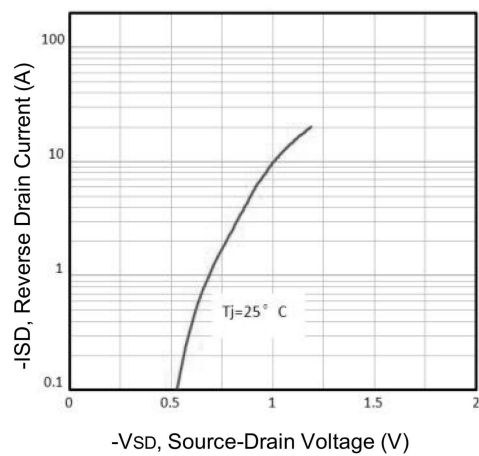
Typical Transfer Characteristics



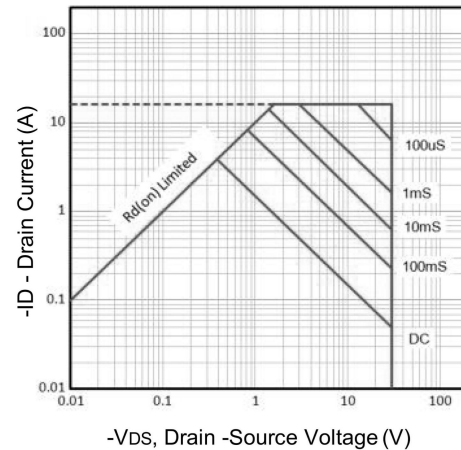
On-Resistance vs. Drain Current and Gate



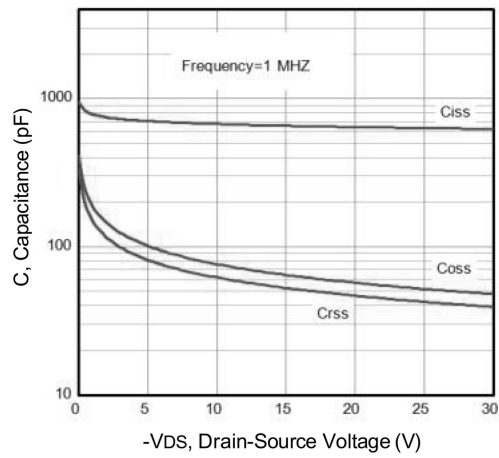
Typical Source-Drain Diode Forward Voltage



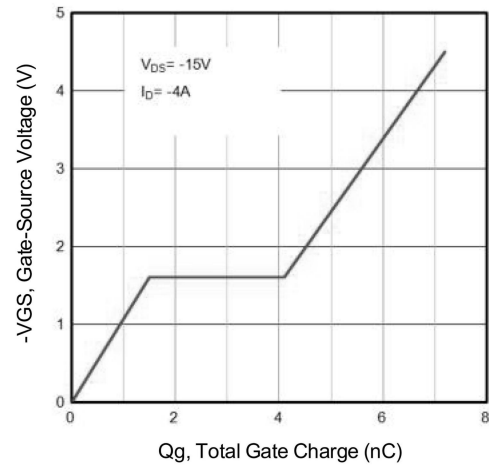
Maximum Safe Operating Area



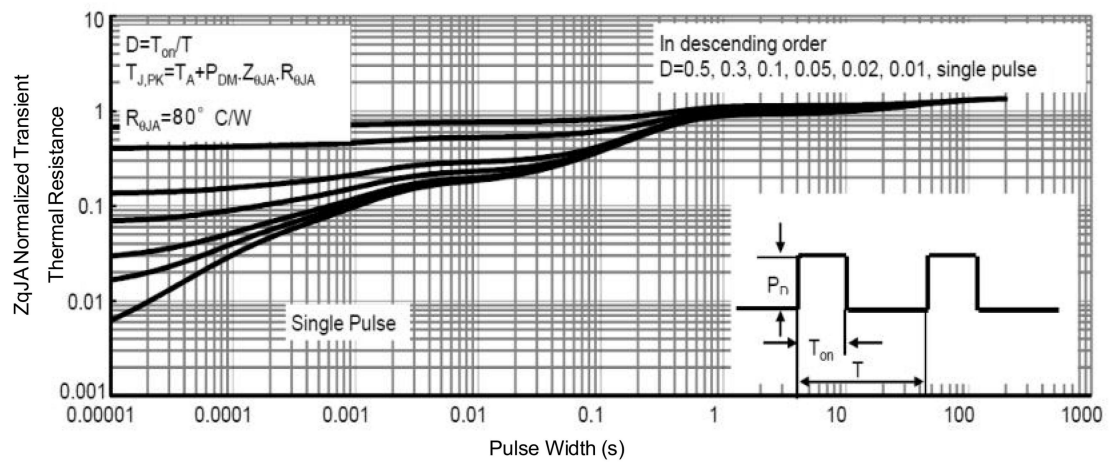
Typical Capacitance Vs. Drain-Source Voltage



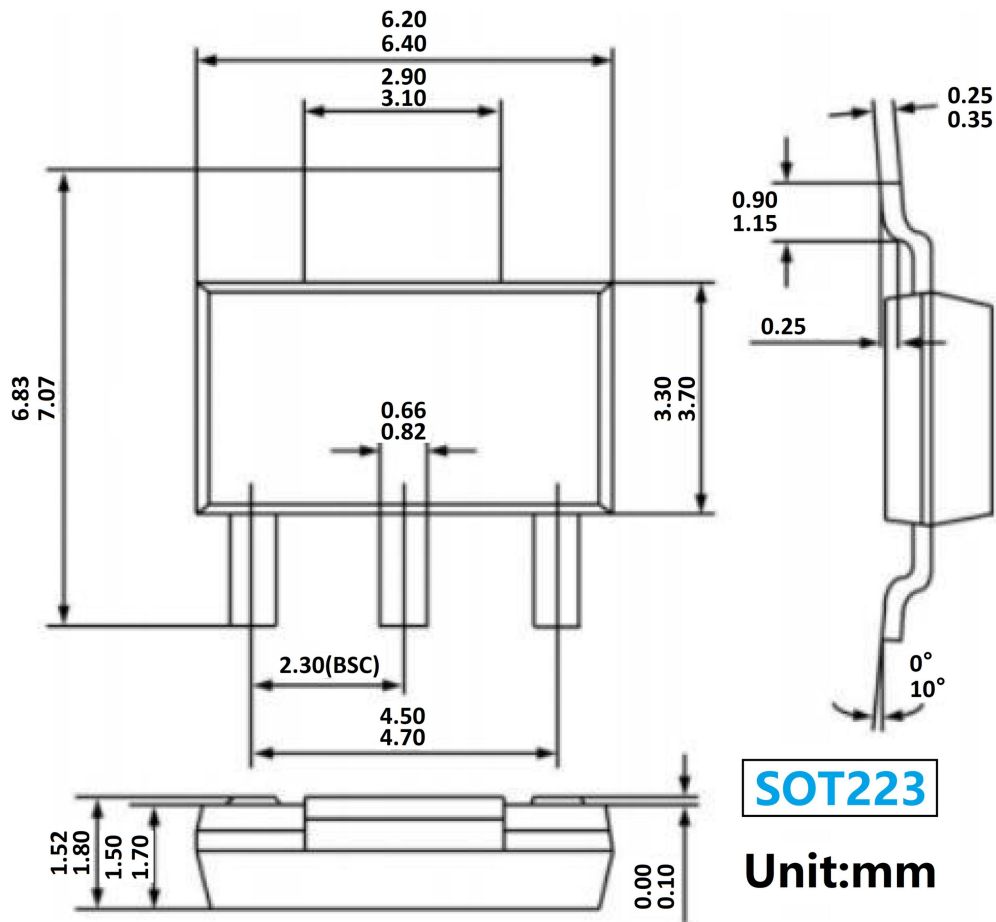
Typical Gate Charge Vs. Gate-Source Voltage



Normalized Maximum Transient Thermal Impedance



Package Mechanical DATA



SOT223

Unit:mm