

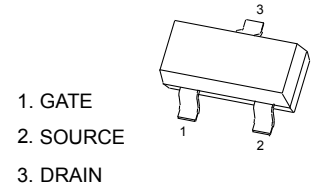
Features

- High density cell design for Low $R_{DS(on)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability
- ESD protected

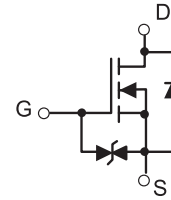
APPLICATION

- Load Switch for Portable Devices
- DC/DC Converter

SOT23



Equivalent circuit



Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current ($T_J = 150^\circ\text{C}$)	$T_A = 25^\circ\text{C}$	I_D	0.3	A
	$T_A = 100^\circ\text{C}$		0.19	
Drain Current-Pulsed		I_{DM}	0.8	A
Maximum Power Dissipation		P_D	0.35	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-50 To 150	$^\circ\text{C}$

Electrical Characteristics (TA=25°C unless otherwise specified)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
On/Off States						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V I _D =250μA	60			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =60V, V _{GS} =0V			1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±10V, V _{DS} =0V			±500	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	1		2.5	V
R _{DS(ON)}	Drain-Source On-State Resistance	V _{GS} = 10 V, I _D =0.3A		2	3	Ω
		V _{GS} = 5 V, I _D =0.3A		2.1	3.5	Ω
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1.0MHz		21	50	pF
C _{oss}	Output Capacitance			11	25	pF
C _{rss}	Reverse Transfer Capacitance			4	5	pF
Switching Times						
t _{d(on)}	Turn-on Delay Time	V _{DD} =30V, I _D =0.2A V _{GS} =10V ,R _G =10Ω		10		nS
t _r	Turn-on Rise Time			50		nS
t _{d(off)}	Turn-Off Delay Time			17		nS
t _f	Turn-Off Fall Time			10		nS
Q _g	Total Gate Charge	V _{DS} =10V, I _D =0.3A, V _{GS} =4.5V		1.7	3	nC
Q _{gs}	Gate-Source Charge			0.8		nC
Q _{gd}	Gate-Drain Charge			0.8		nC
Source-Drain Diode Characteristics						
V _{SD}	Forward on Voltage	V _{GS} =0V, I _S =0.2A		0.87	1.2	V

Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

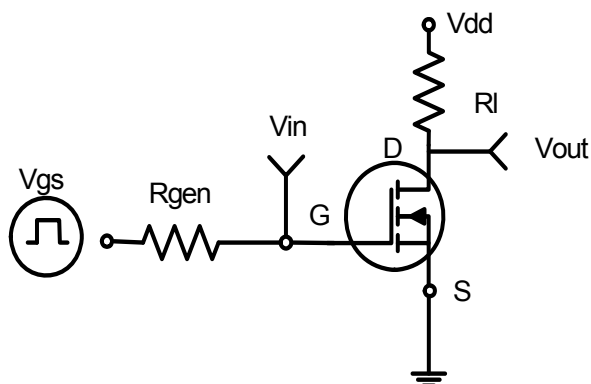


Figure 1: Switching Test Circuit

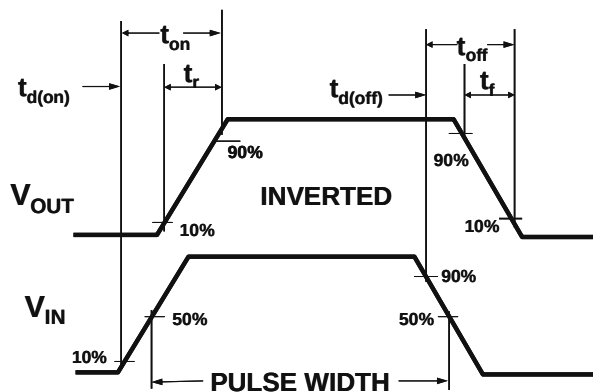


Figure 2: Switching Waveforms

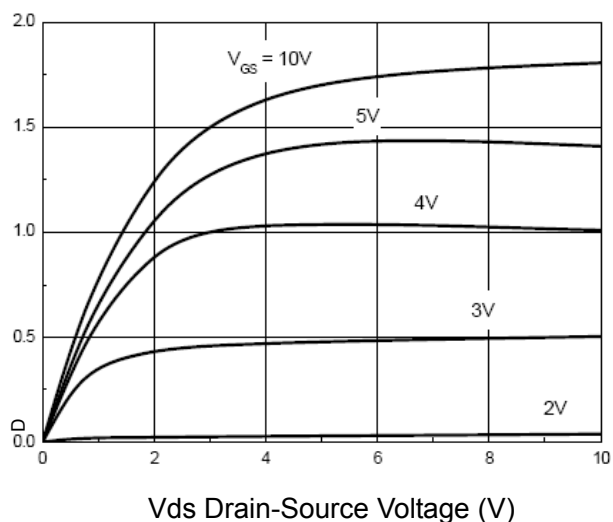


Figure 3: Output Characteristics

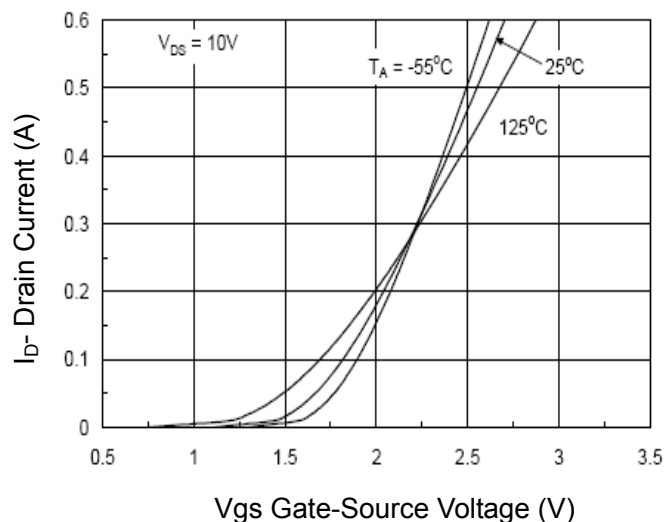


Figure 4: Transfer Characteristics

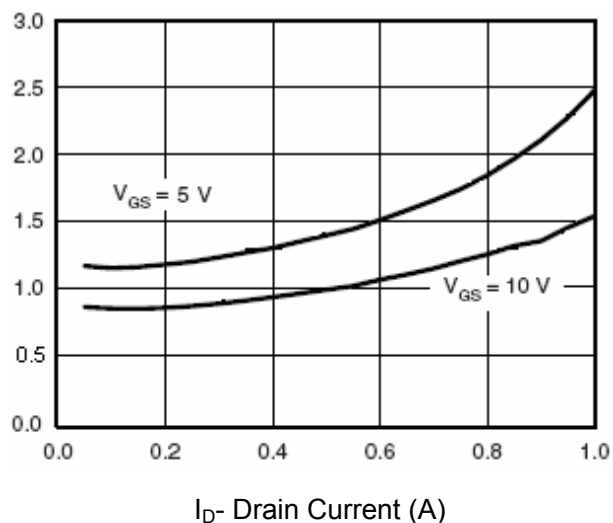


Figure 5: Drain-Source On-Resistance

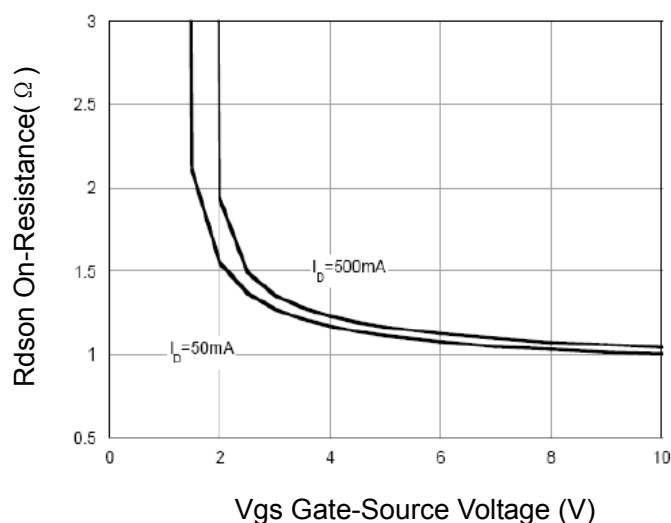


Figure 6: $R_{ds(on)}$ vs V_{gs}

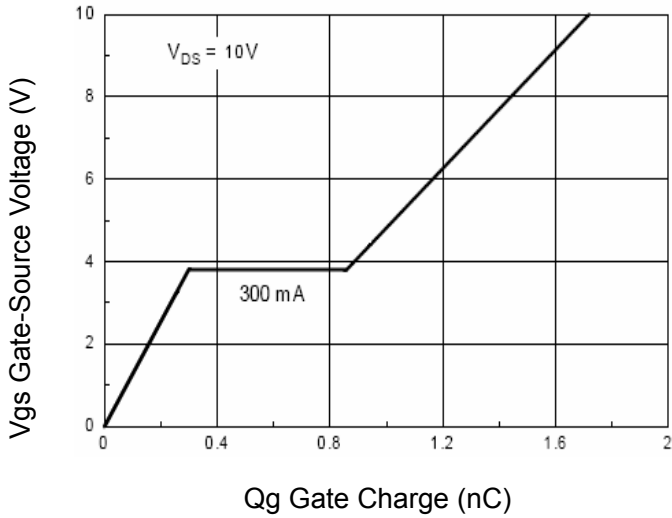


Figure 7 Gate Charge

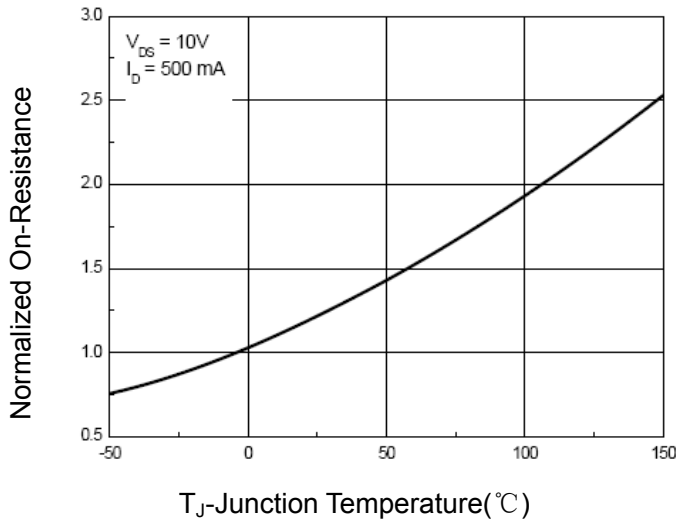


Figure 9 Drain-Source On-Resistance

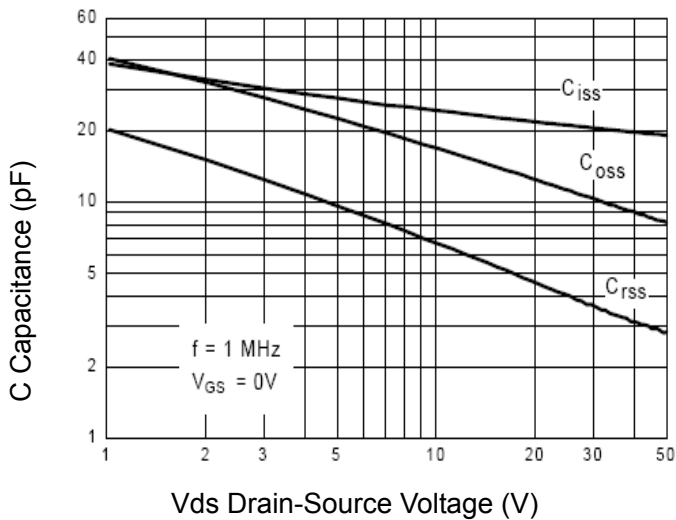


Figure 11 Capacitance vs Vds

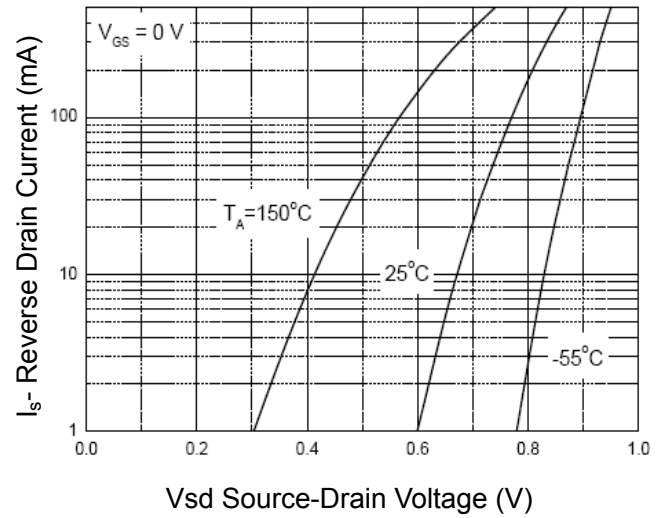


Figure 8 Source-Drain Diode Forward

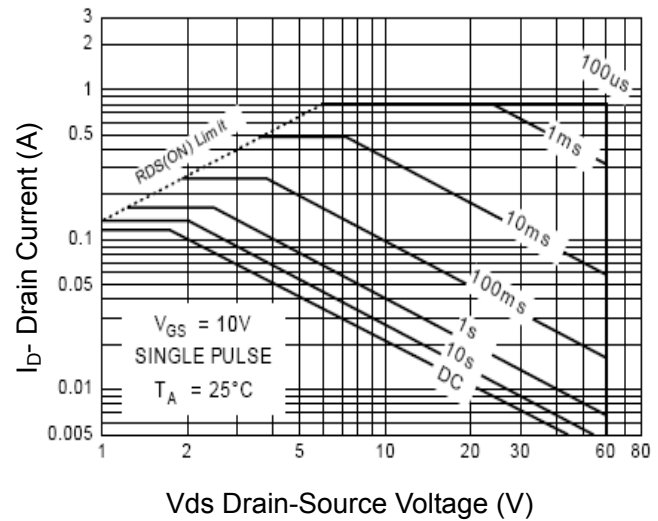


Figure 10 Safe Operation Area

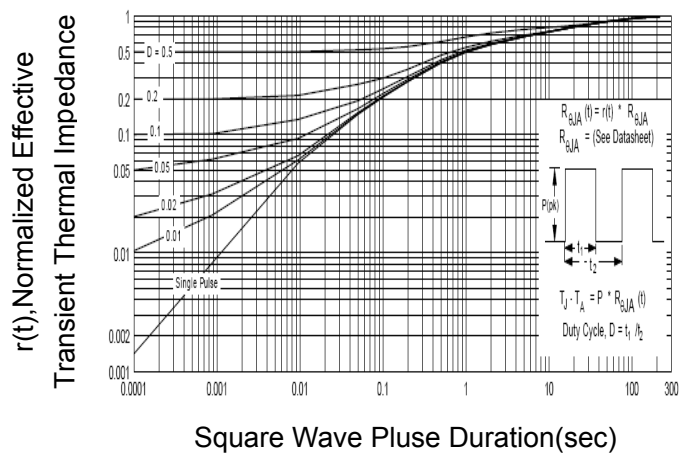
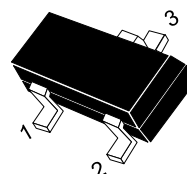
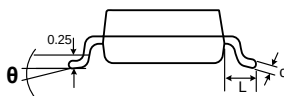
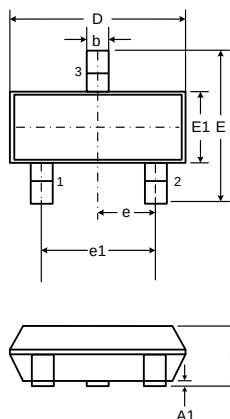


Figure 12 Normalized Maximum Transient Thermal Impedance

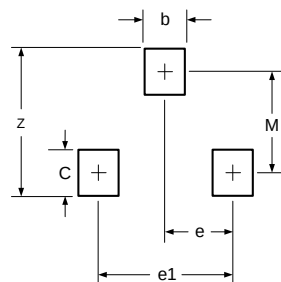
Outline Drawing – SOT23

PACKAGE OUTLINE



DIMENSIONS

SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.90	1.15	0.035	0.045
A1	0.00	0.10	0.000	0.004
b	0.30	0.50	0.012	0.020
c	0.08	0.15	0.003	0.006
D	2.80	3.00	0.110	0.118
E	2.25	2.55	0.089	0.100
E1	1.20	1.40	0.047	0.055
e	0.95 BSC		0.0374 BSC	
e1	1.80	2.00	0.071	0.079
L	0.45	0.65	0.018	0.026
θ	0	8°	0	8°



DIMENSIONS		
DIM	INCHES	MILLIMETERS
M	0.080	2.02
C	0.032	0.80
Z	0.111	2.82
e	0.037 BSC	0.95 BSC
e1	0.075 BSC	1.90 BSC
b	0.032	0.80

Notes

1. Dimensioning and tolerances per ANSI Y14.5M, 1985.
2. Controlling Dimension: Inches
3. Pin 3 is the cathode (Unidirectional Only).
4. Dimensions are exclusive of mold flash and metal burrs.