

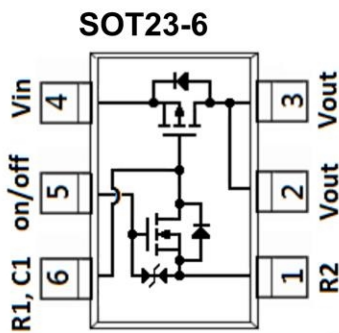
**Product Summary**

- 1.5V to 12V Input
- 1.8V to 8V Logic Level Control
- Low Profile, Small Footprint SOT23-6 Package
- 2000V ESD Protection on Input Switch
- Adjustable Slew-Rate

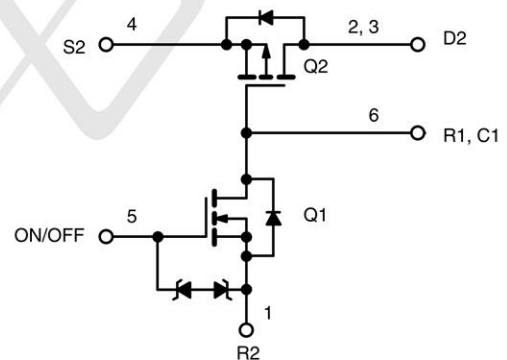
**Application**

- Battery Packs
- Battery-Powered Portable Equipment
- Cellular and Cordless Telephones

**Package and Pin Configuration**



**Circuit diagram**



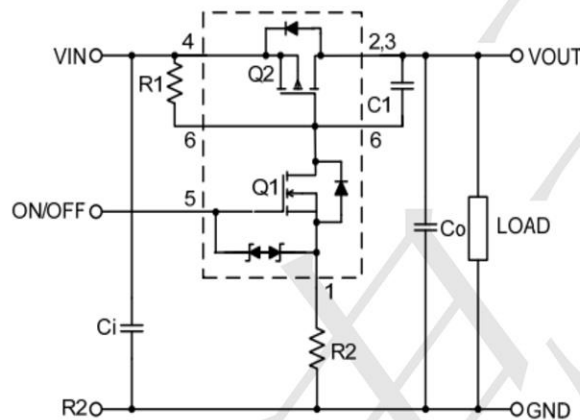
**Marking:**



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

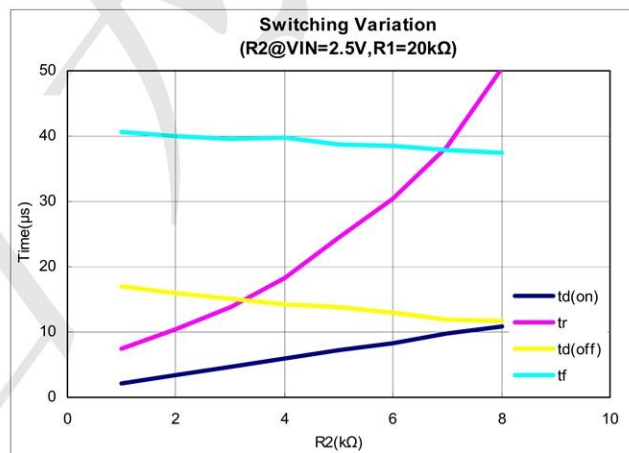
Symbol	Parameter	Limit	Unit
$V_{IN}$	Input Voltage	12	V
$V_{ON/OFF}$	ON/OFF Voltage	8	
$I_L$	Continuous Load Current	$\pm 2.8$	A
	Pulse Load Current	$\pm 6$	
$I_S$	Continuous Source Current (Source-Drain Diode)	-1.0	
$P_D$	Maximum Power Dissipation	0.5	W
$T_J, T_{STG}$	Junction and Storage Temperature Range	-50 to +150	$^{\circ}\text{C}$
ESD	ESD Rating, MIL-STD-883D HBM	2000	V
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	250	$^{\circ}\text{C}/\text{W}$

**Typical Application Circuit**



COMPONENTS		
R1	Pull-Up Resistor	Typical 20kΩ to 1MΩ*
R2	Optional Slew-Rate Control	Typical 0 to 50kΩ
C1	Optional Slew-Rate Control	Typical 1000pF

\*Minimum R1 value should be at least  $10 \times R2$  to ensure Q1 turn-on.



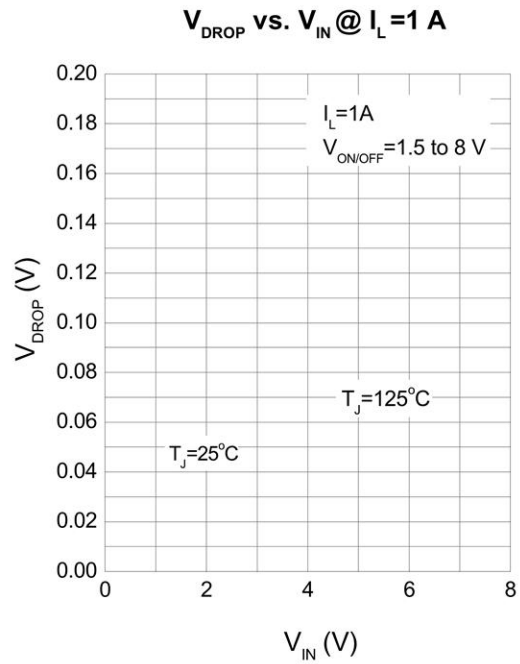
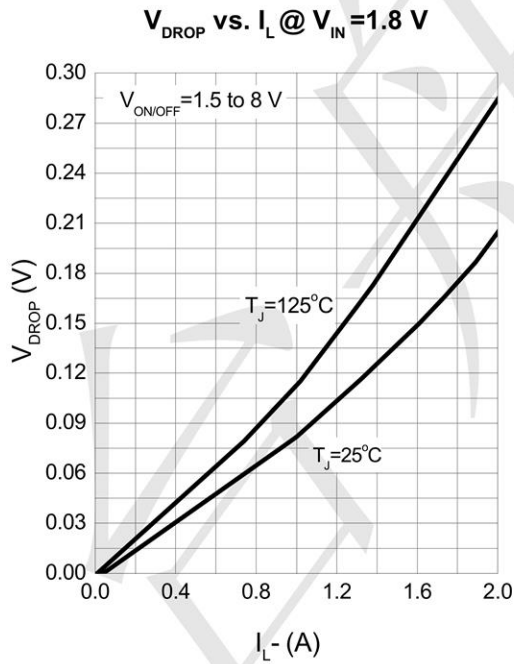
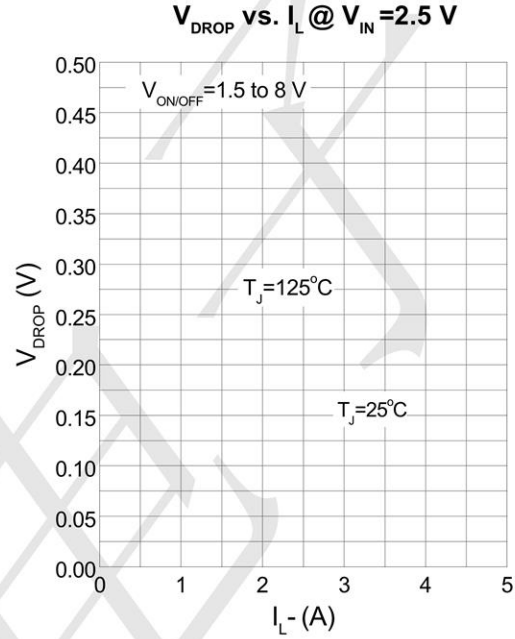
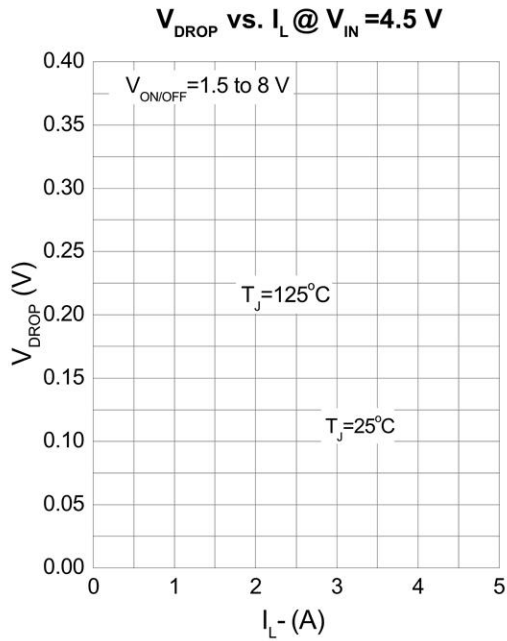
Note 1: For R2 switching variations with other VIN/R1 combinations, see Typical Characteristics.



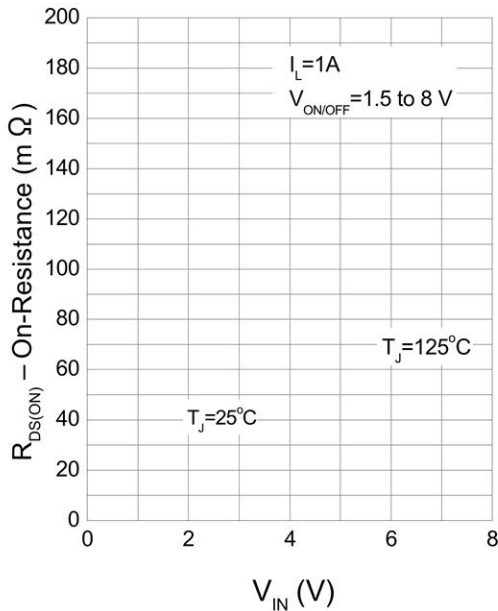
**Electrical Characteristics (  $T_A = 25^\circ\text{C}$  unless otherwise noted )**

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
<b>OFF Characteristics</b>						
$I_{FL}$	Reverse Leakage Current	$V_{IN}=12\text{V}, V_{ON/OFF}=0\text{V}$			1	$\mu\text{A}$
$V_{SD}$	Diode Forward Voltage	$I_S = -1\text{A}$	-0.4		-1	V
<b>ON Characteristics</b>						
$V_{IN}$	Input Voltage Range		1.5		12	V
$R_{DS(ON)}$	Static Drain-to-Source On-Resistance	$V_{ON/OFF}=1.8\text{V}, V_{IN}=4.5\text{V}, I_D=1.0\text{A}$		0.045	0.055	$\Omega$
		$V_{ON/OFF}=1.8\text{V}, V_{IN}=2.5\text{V}, I = 1.0\text{A}$		0.050	0.065	
		$V_{ON/OFF}=1.8\text{V}, V_{IN}=2.5\text{V}, I = 1.0\text{A}$		0.080	0.150	
$I_{D(on)}$	On-State (P-Channel) Drain Current	$V_{IN-OUT}\leq 0.2\text{V}, V_{IN}=5\text{V}, V_{ON/OFF}=1.5\text{V}$	1			A
		$V_{IN-OUT}\leq 0.3\text{V}, V_{IN}=3\text{V}, V_{ON/OFF}=1.8\text{V}$	1			

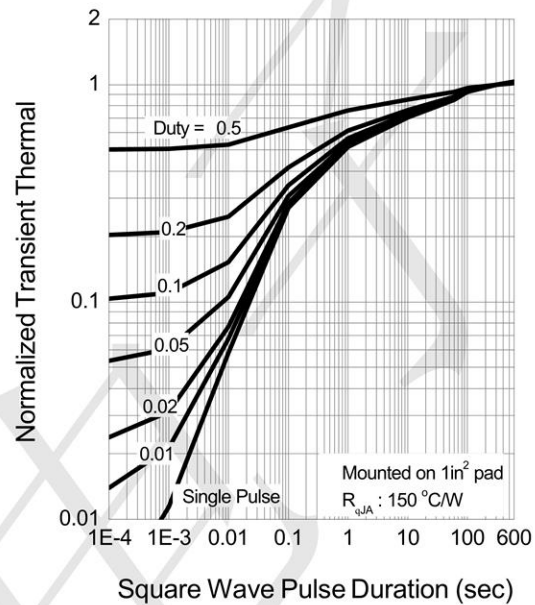
**Typical Operating Characteristics**



**On-Resistance vs. Input Voltage**

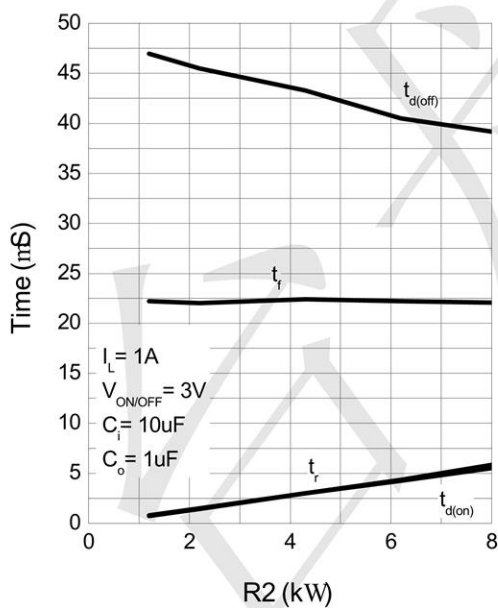


**Thermal Transient Impedance**



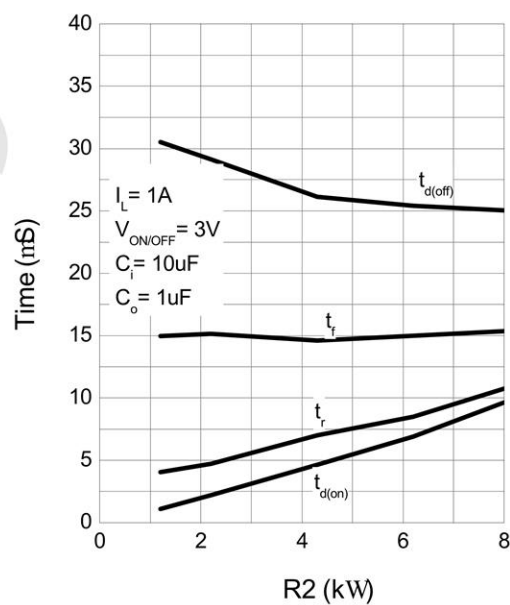
**Switching Variation**

**R2 @  $V_{IN} = 4.5 V$ , R1 = 20 k $\Omega$**

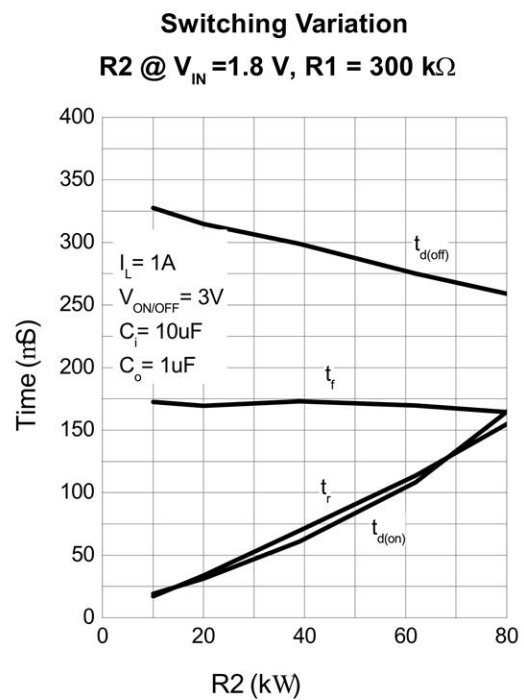
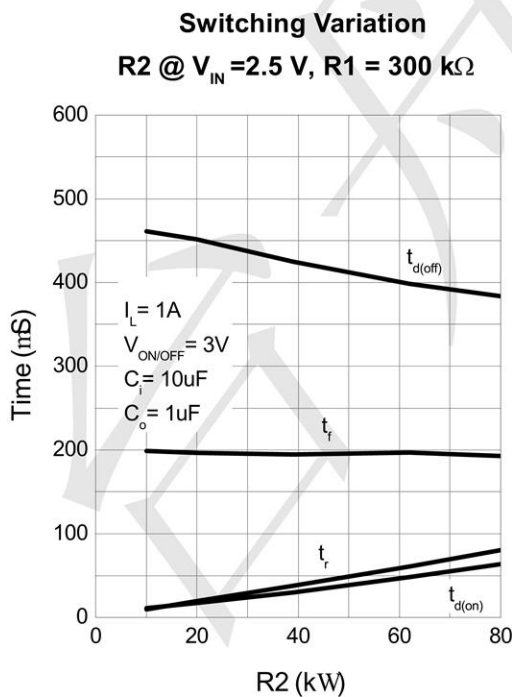
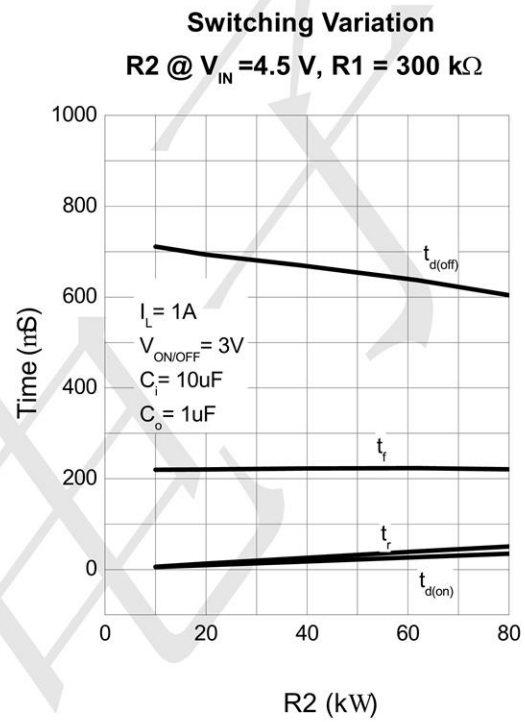
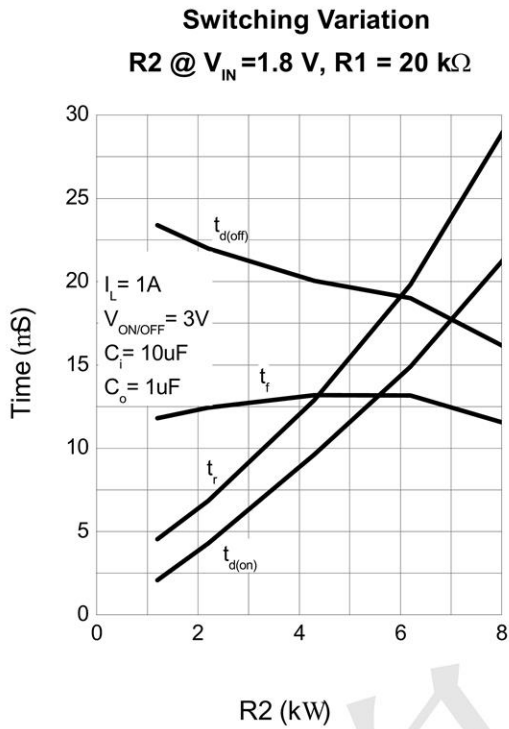


**Switching Variation**

**R2 @  $V_{IN} = 2.5 V$ , R1 = 20 k $\Omega$**

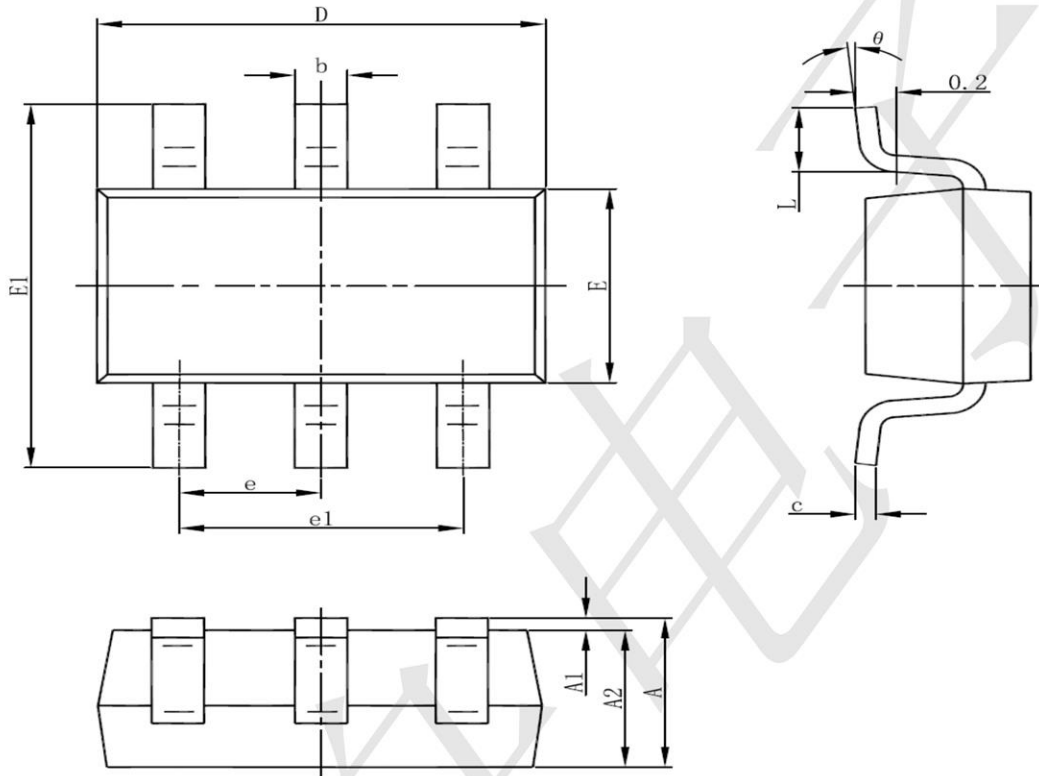








**SOT23-6 Package Information**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°