



TECH PUBLIC

—台丹电子—

TPNTGD1100LT1G

Load Switch with Level-Shift

www.sot23.com.tw

Product Summary

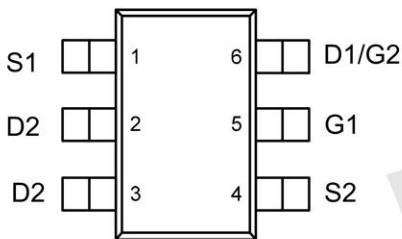
- 1.8V to 8V Input
- 1.5V to 8V Logic Level Control
- Low Profile, Small Footprint SOT23-6 Package
- 2000V ESD Protection on Input Switch
- Adjustable Slew-Rate

Application

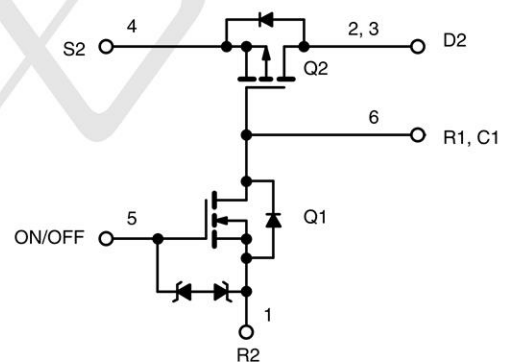
- Battery Packs
- Battery-Powered Portable Equipment
- Cellular and Cordless Telephones

Package and Pin Configuration

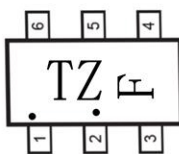
SOT23-6



Circuit diagram



Marking:



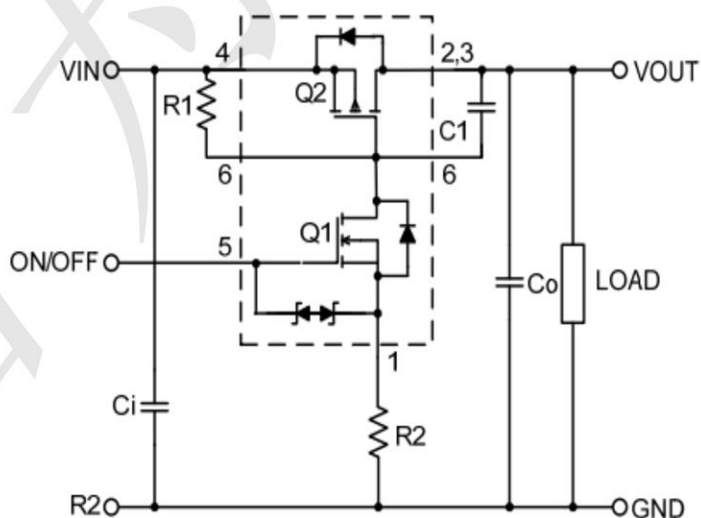
Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Symbol	Parameter	Limit	Unit
V <sub>IN</sub>	Input Voltage	8	V
V <sub>ON/OFF</sub>	ON/OFF Voltage	8	
I <sub>L</sub>	Continuous Load Current	±3.5	A
	Pulse Load Current	±10	
I <sub>S</sub>	Continuous Source Current (Source-Drain Diode)	±2.5	
P <sub>D</sub>	Maximum Power Dissipation	0.85	W
T <sub>J</sub> , T <sub>STG</sub>	Junction and Storage Temperature Range	-50 to +150	°C
ESD	ESD Rating, MIL-STD-883D HBM	2000	V
R <sub>θJA</sub>	Thermal Resistance, Junction-to-Ambient	250	°C/W

**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	$V_{IN}=8\text{V}, V_{ON/OFF}=0\text{V}$			1	$\mu\text{A}$
$V_{SD}$	Diode Forward Voltage	$I_S=-1\text{A}$		-0.7	-1	V
<b>ON Characteristics</b>						
$V_{IN}$	Input Voltage Range		1.5		8.0	V
$R_{DS(ON)}$	Static Drain-to-Source On-Resistance	$V_{ON/OFF}=1.5\text{V}, V_{IN}=4.5\text{V}, I_D=1.0\text{A}$		0.045	0.059	$\Omega$
		$V_{ON/OFF}=1.5\text{V}, V_{IN}=2.5\text{V}, I=1.0\text{A}$		0.055	0.070	
		$V_{ON/OFF}=1.5\text{V}, V_{IN}=1.8\text{V}, I=1.0\text{A}$		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
		$V_{IN-OUT}\leq 0.3\text{V}, V_{IN}=3\text{V}, V_{ON/OFF}=1.5\text{V}$	1			

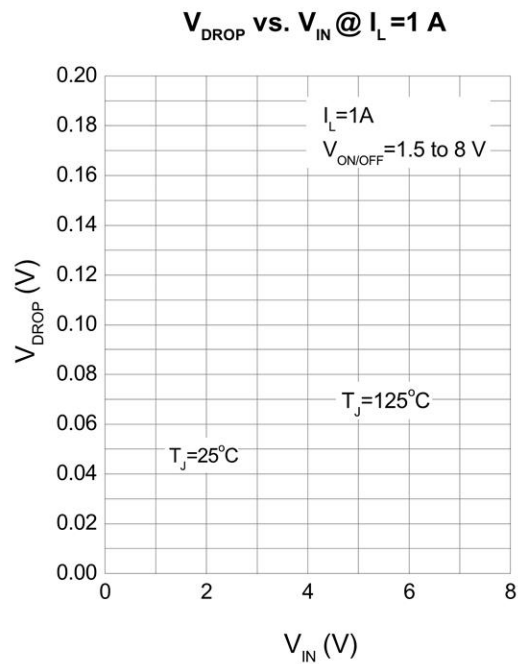
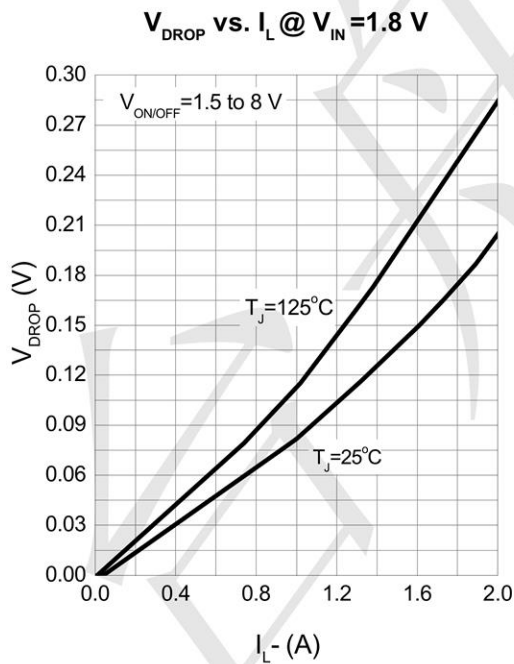
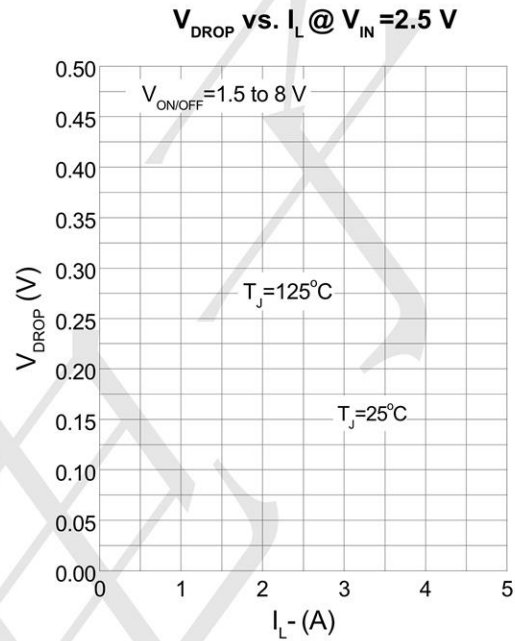
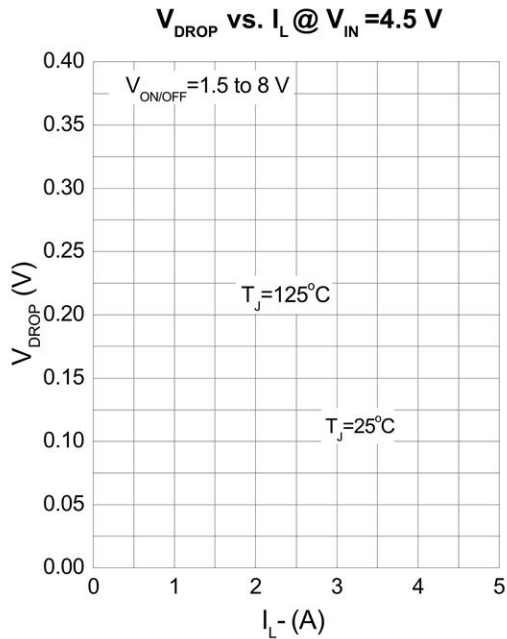
**Typical Application Circuit**



<b>COMPONENTS</b>		
R1	Pull-Up Resistor	Typical 10k $\Omega$ to 1M $\Omega$ *
R2	Optional Slew-Rate Control	Typical 0 to 100k $\Omega$
C1	Optional Slew-Rate Control	Typical 1000pF

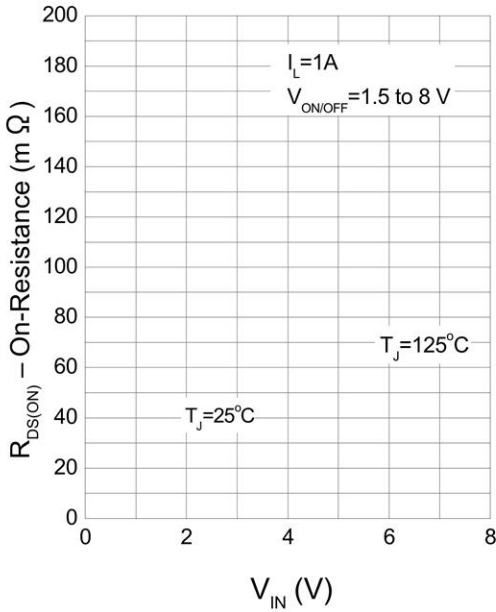


### Typical Operating Characteristics

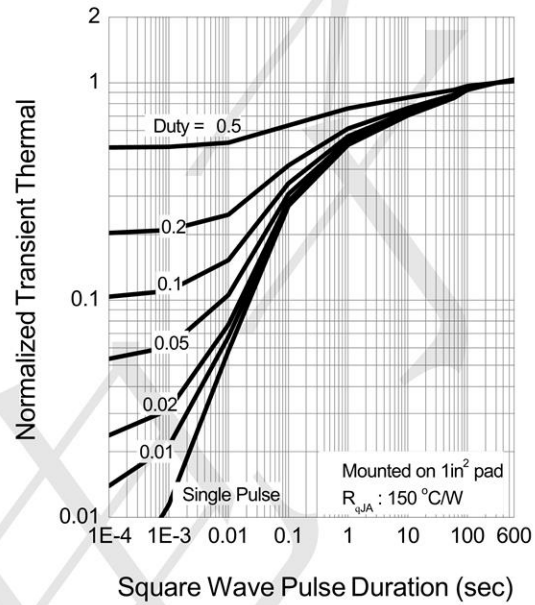




On-Resistance vs. Input Voltage

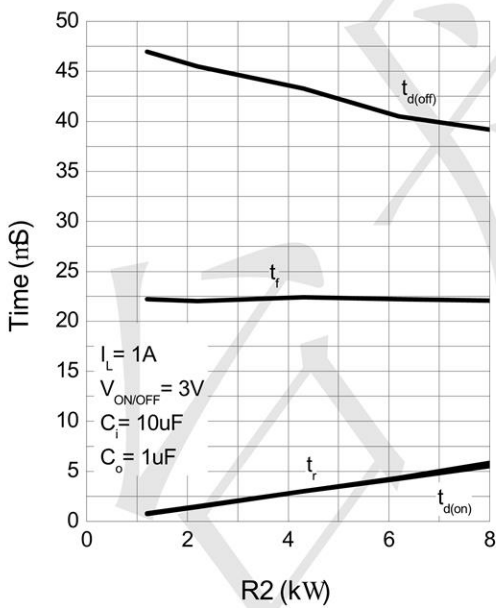


Thermal Transient Impedance



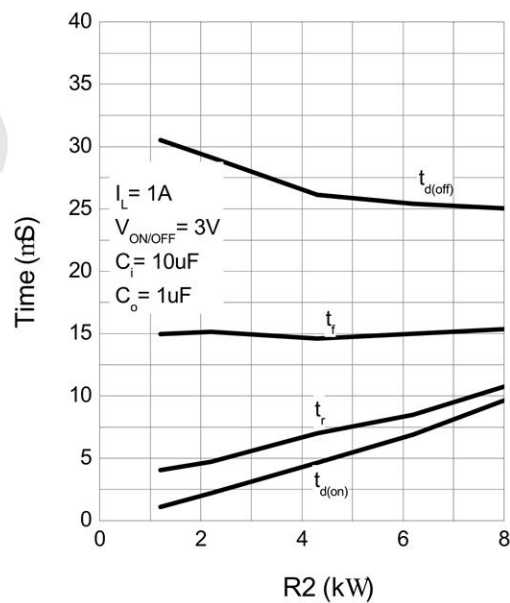
Switching Variation

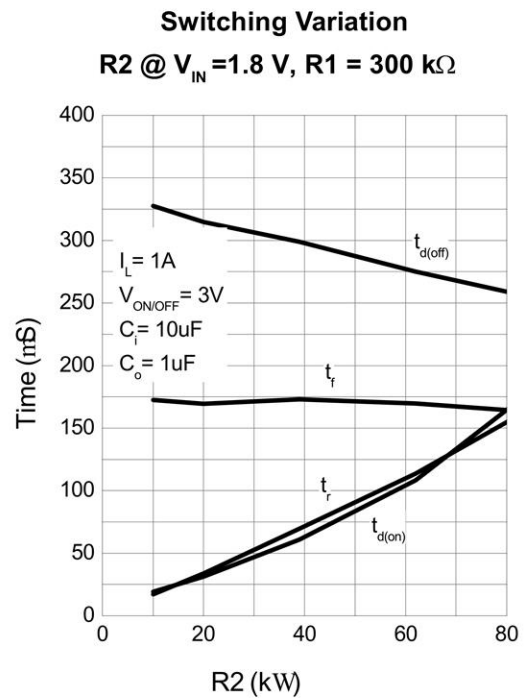
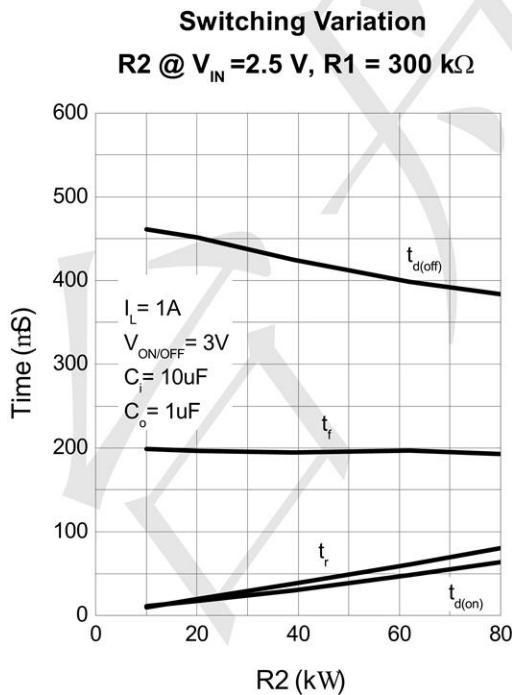
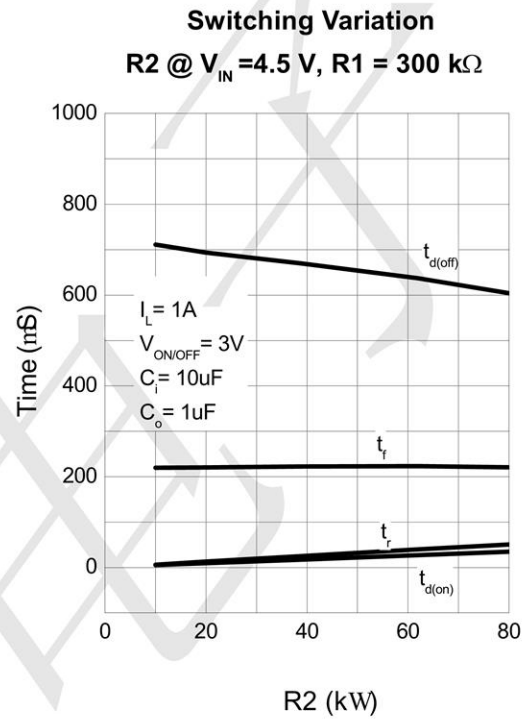
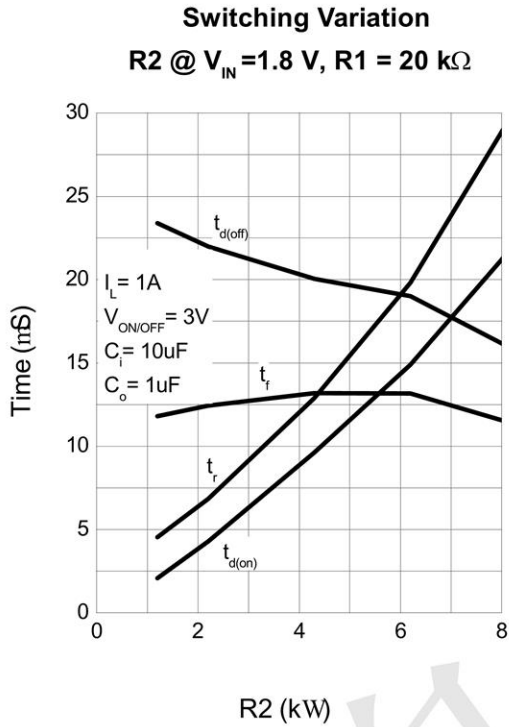
R2 @  $V_{IN} = 4.5$  V, R1 = 20 k $\Omega$



Switching Variation

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







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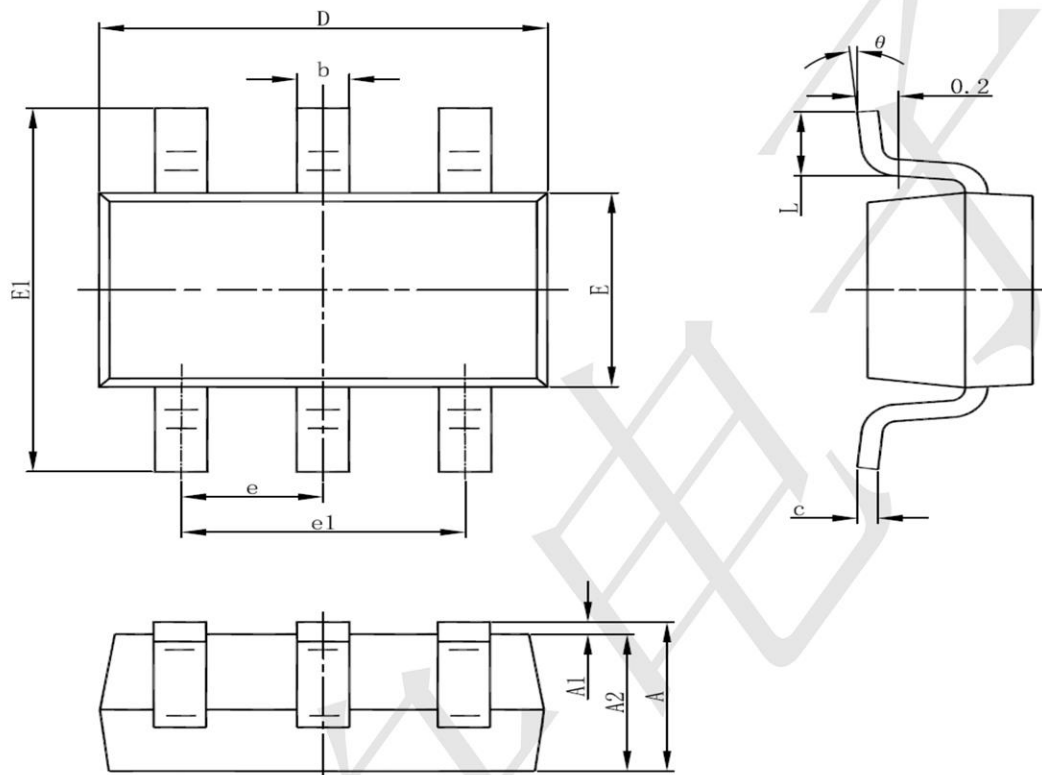
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**SOT23-6 Package Information**



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°