

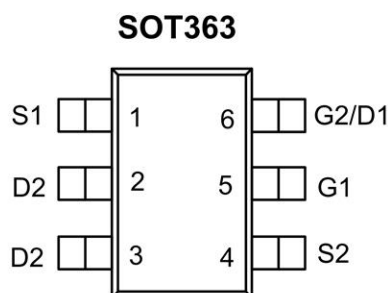
Product Summary

- Extremely Low RDS(on) P-Channel Load Switch MOSFET
- Low Profile, Small Footprint Package
- VIN Range 1.8 to 8.0 V
- ON/OFF Range 1.5 to 8.0 V
- Level Shift MOSFET is ESD Protected

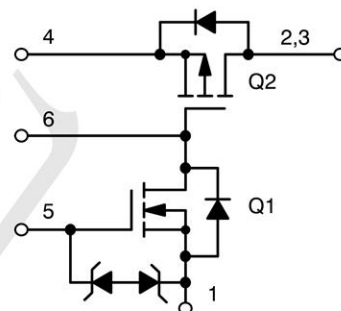
Application

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

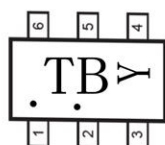
Package and Pin Configuration



Circuit diagram



Marking:



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

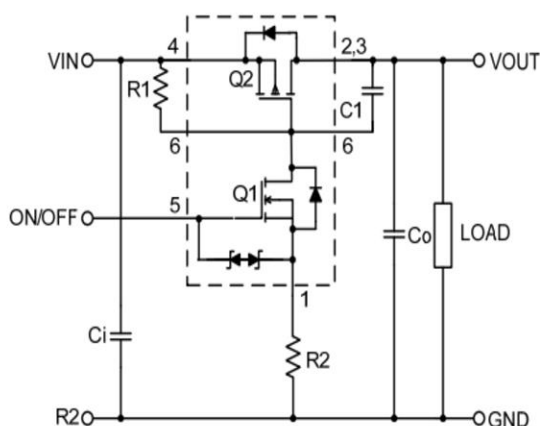
PARAMETER	SYMBOL	Ratings	UNITS
Input Voltage Range	V _{IN}	8	V
On/Off Voltage Range	V _{ON} /V _{OFF}	8	V
Continuous Load Current	I _L	1.3	A
Pulsed Load Current	I _{LM}	3.9	A
Continuous intrinsic diode conduction	I _S	- 0.4	A
Maximum power dissipation	P _D	1.0	W
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55~150	°C
ESD, MIL-STD-883D HBM (100pF/1.5kohm) (Von/off pin)	V _{ESD}	2	kV
Typical Junction to Ambient ^(Note 2)	R _{θJA}	320	°C/W

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

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNITS
Off Characteristics						
Q1 Drain-to-Source Breakdown Voltage	V_{in}	$V_{GS2}=0V, I_{D2} = -250\text{ }\mu\text{A}$			-8	V
Leakage Current	I_{FL}	$V_{GS1}=0V, V_{DS2} = -8V$	-	-	1	μA
Q1 Gate-to-Source Leakage Current	I_{GSS}	$V_{DS1}=0V, V_{gs1}= 8V$	-	-	1	μA
Q1 Diode Forward Voltage	V_{SD}	$I_S=-0.4A, V_{DS1}=0V$		-0.8	-1.1	V
On Characteristics						
Input voltage range	$V_{ON/OFF}$		1.5			V
Q1 Gate Threshold Voltage	$V_{gs(th)}$	$V_{GS1} = V_{ds1}, I_D = -250\text{ }\mu\text{A}$	0.4		1.0	V
Input Voltage	V_{in}	$V_{GS1} = V_{ds1}, I_D = -250\text{ }\mu\text{A}$	1.8		8	V
Drain-Source On-State Resistance (Q2)	$R_{DS(on)}$	$V_{ON/OFF} = 1.5\text{ V}, V_{IN} = 4.5\text{ V}, I_D = 1.2\text{ A}$		130	150	$\text{m}\Omega$
		$V_{ON/OFF} = 1.5\text{ V}, V_{IN} = 2.5\text{ V}, I_D = 1\text{ A}$		160	210	
		$V_{ON/OFF} = 1.5\text{ V}, V_{IN} = 1.8\text{ V}, I_D = 0.7\text{ A}$		220	270	
Load Current	I_L	$V_{drop} \leq 0.2V, V_{in}=5.0, V_{on/oFF}=1.5V$	1.0	-		A
		$V_{drop} \leq 0.3V, V_{in}=2.5, V_{on/oFF}=1.5V$	1.0	-		

Typical Application Circuit

Q2 Drain-to-



COMPONENTS		
R1	Pull-Up Resistor	Typical $10\text{ k}\Omega$ to $1\text{ M}\Omega^*$
R2	Optional Slew-Rate Control	Typical 0 to $100\text{ k}\Omega$
C_0, C_1	Output Capacitance	Usually $< 1.0\text{ }\mu\text{F}$
C1	Optional Slew-Rate Control	Typical 1000 pF

Typical Operating Characteristics

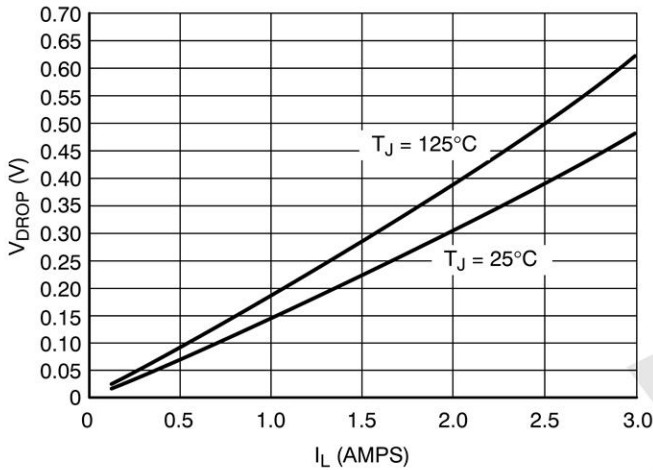


Figure 2. V_{drop} vs. I_L @ $V_{in} = 2.5$ V

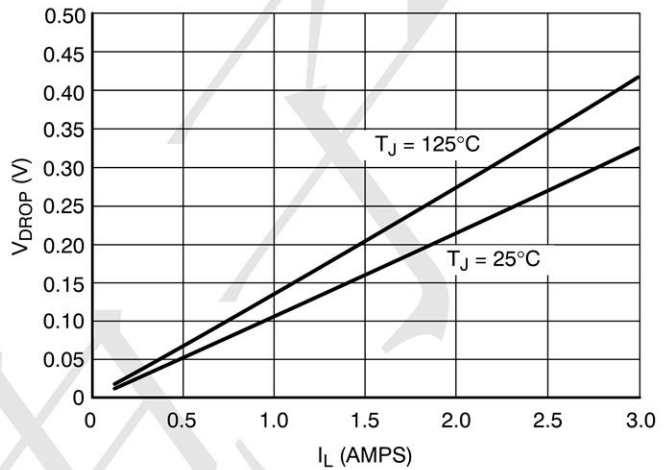


Figure 3. V_{drop} vs. I_L @ $V_{in} = 4.5$ V

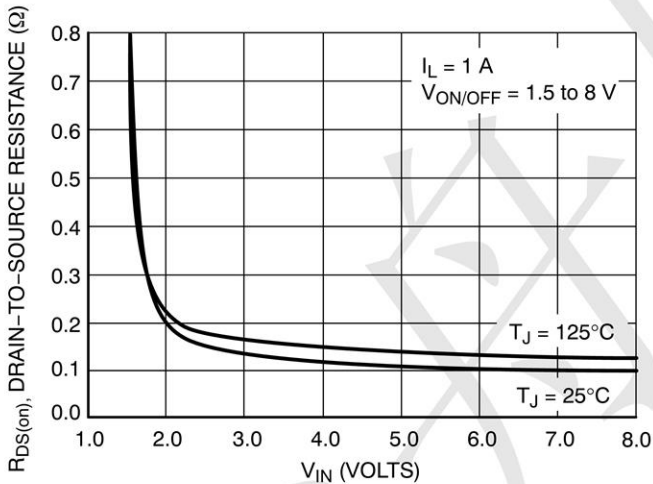


Figure 4. On-Resistance vs. Input Voltage

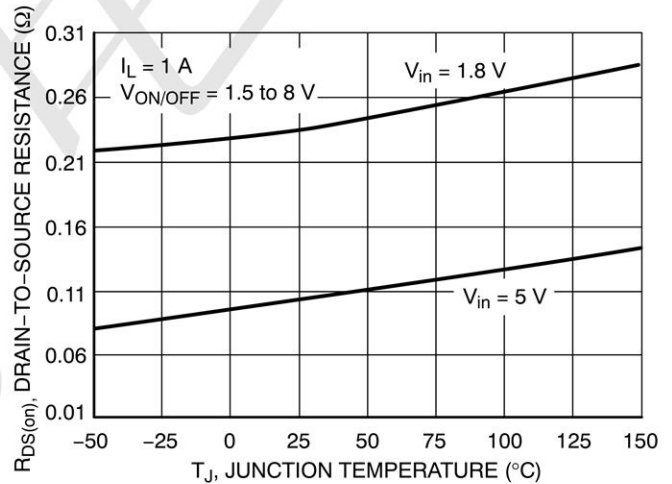


Figure 5. On-Resistance Variation with Temperature

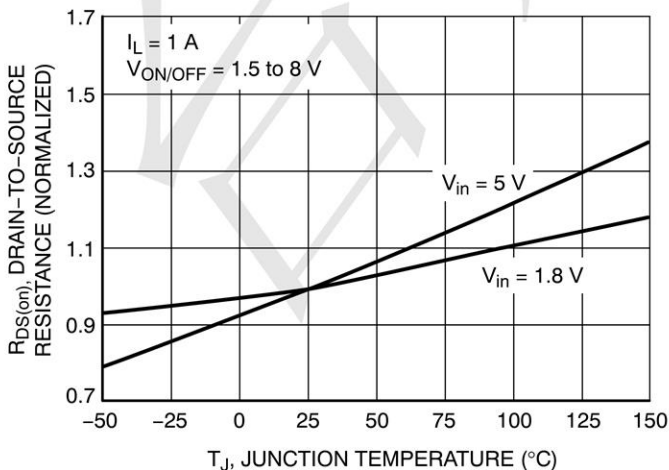


Figure 6. Normalized On-Resistance Variation with Temperature

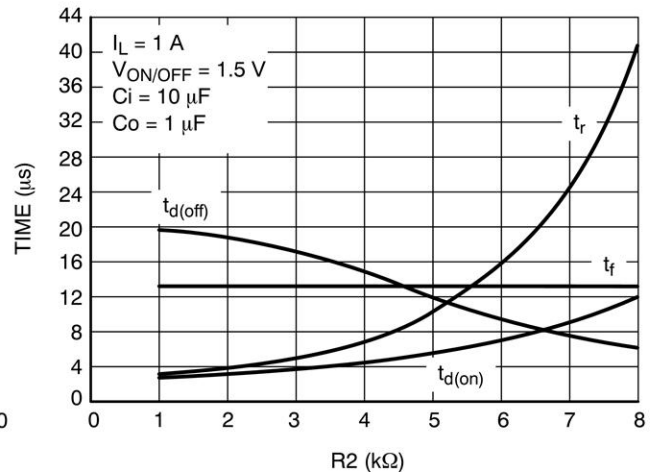


Figure 7. Switching Variation $R2$ @ $V_{in} = 4.5$ V, $R1 = 20$ k Ω

TYPICAL PERFORMANCE CURVES ($T_J = 25^\circ\text{C}$ unless otherwise noted)

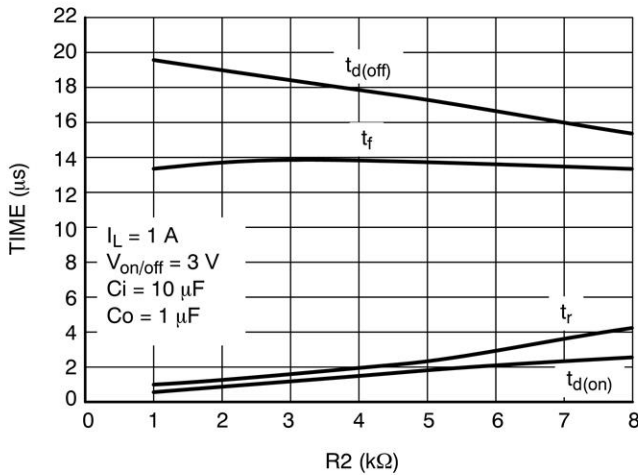


Figure 8. Switching Variation
R2 @ $V_{in} = 4.5\text{ V}$, $R_1 = 20\text{ k}\Omega$

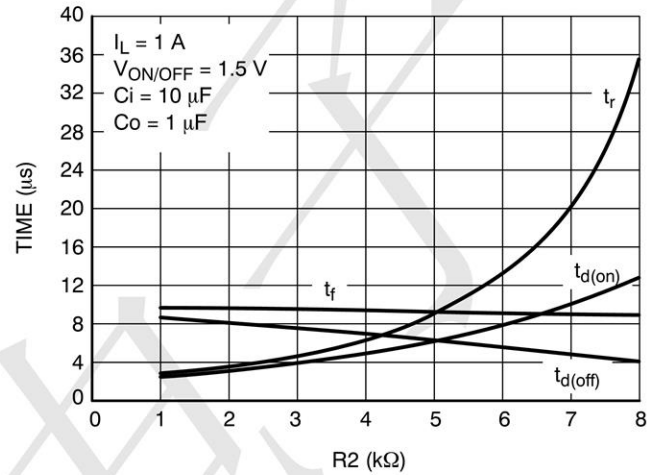


Figure 9. Switching Variation
R2 @ $V_{in} = 2.5\text{ V}$, $R_1 = 20\text{ k}\Omega$

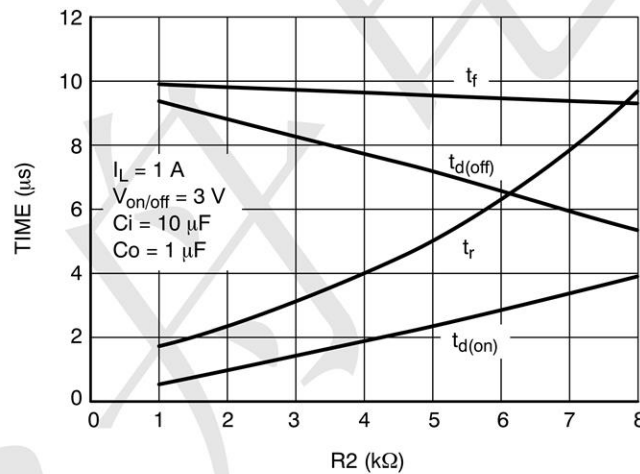


Figure 10. Switching Variation
R2 @ $V_{in} = 2.5\text{ V}$, $R_1 = 20\text{ k}\Omega$

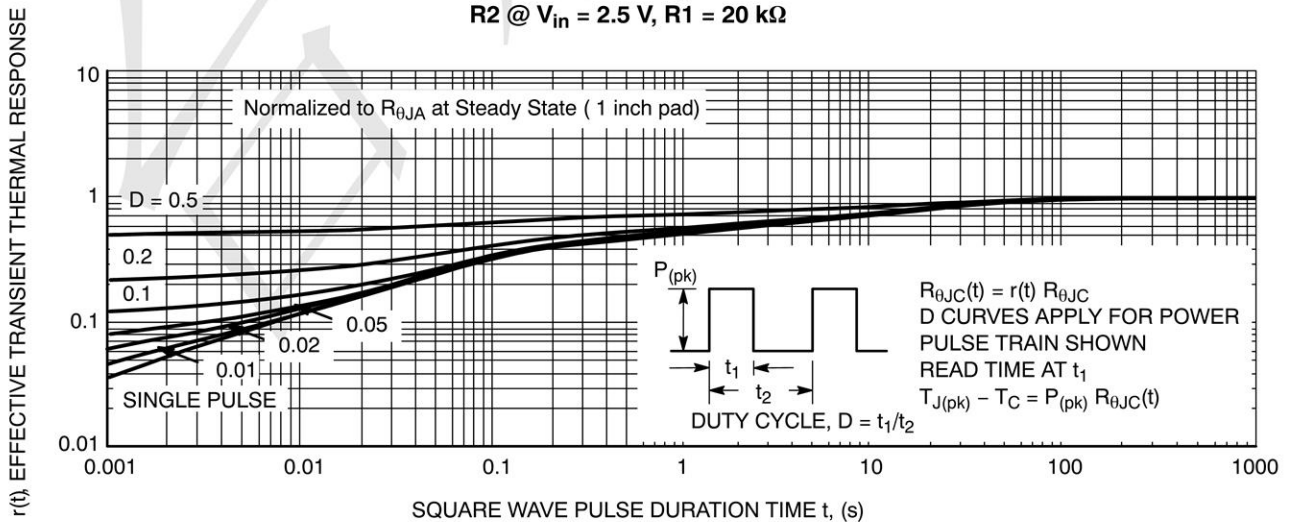
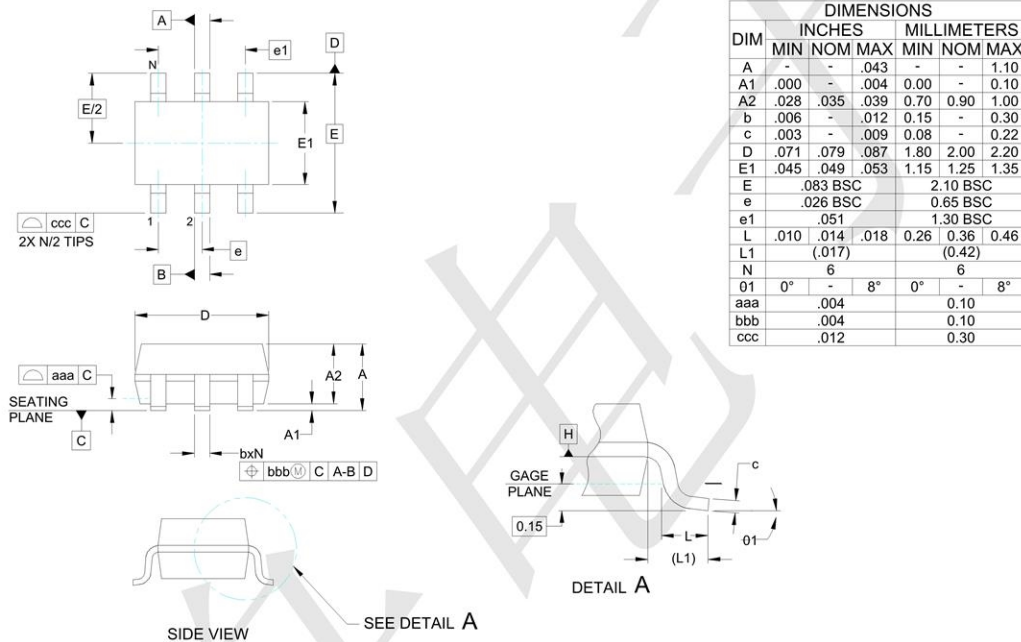


Figure 11. FET Thermal Response

Outline Drawing - SOT-363



Land Pattern - SOT-363

