

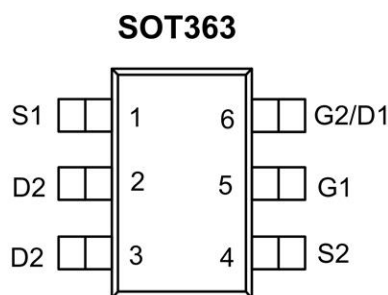
Product Summary

- 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

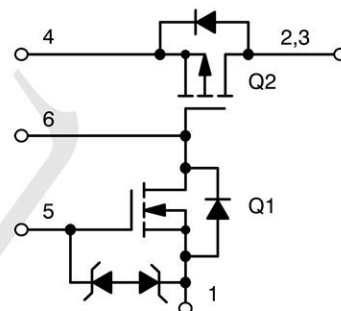
Application

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

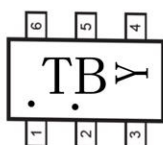
Package and Pin Configuration



Circuit diagram



Marking:



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

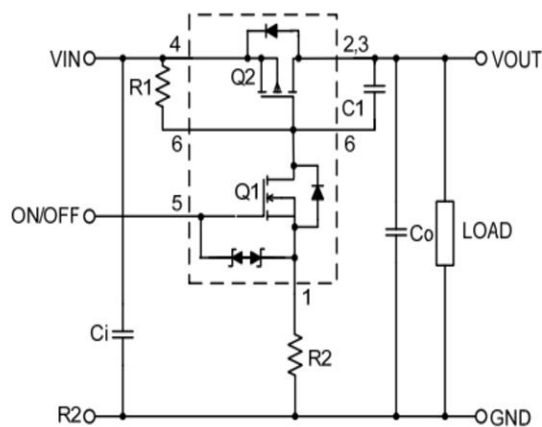
PARAMETER	SYMBOL	Ratings	UNITS
Input Voltage Range	V _{IN}	8	V
On/Off Voltage Range	V _{ON} /V _{OFF}	8	V
Continuous Load Current	I _L	1.3	A
Pulsed Load Current	I _{LM}	3.9	A
Continuous intrinsic diode conduction	I _S	- 0.4	A
Maximum power dissipation	P _D	1.0	W
Operating Junction and Storage Temperature 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-



Source Leakage Current

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

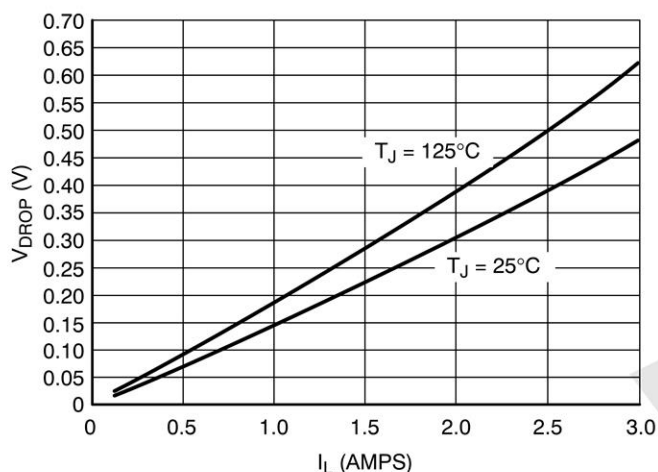


Figure 2. V_{drop} vs. I_L @ $V_{in} = 2.5\text{ V}$

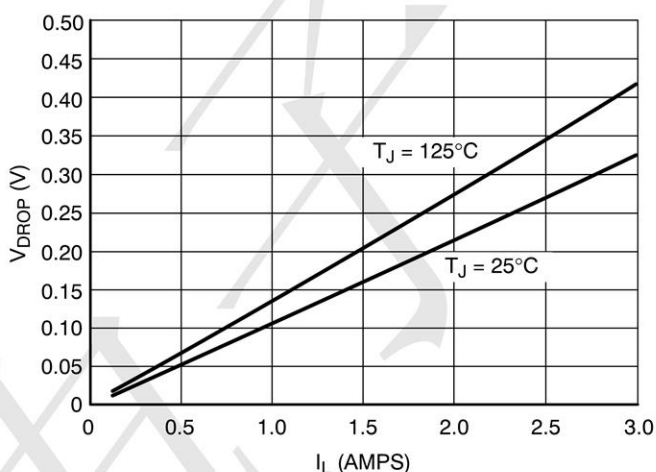


Figure 3. V_{drop} vs. I_L @ $V_{in} = 4.5\text{ V}$

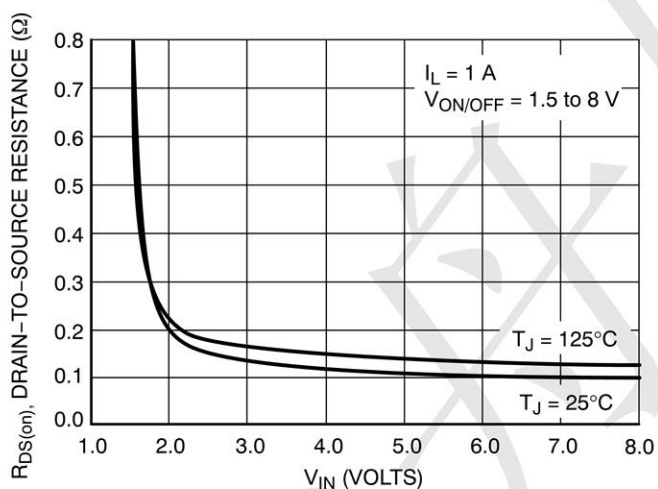


Figure 4. On-Resistance vs. Input Voltage

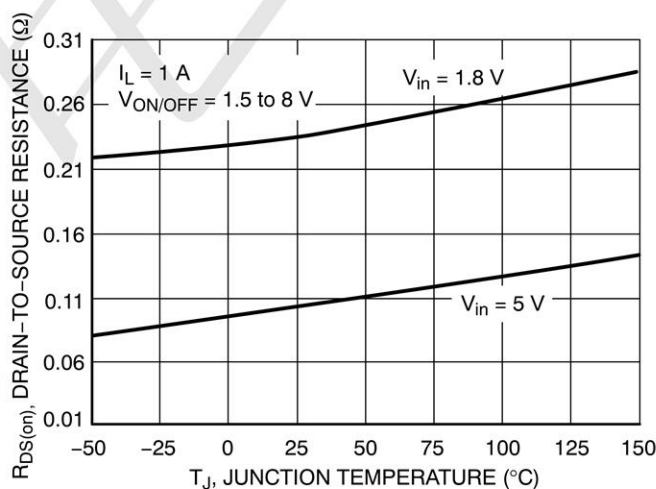


Figure 5. On-Resistance Variation with Temperature

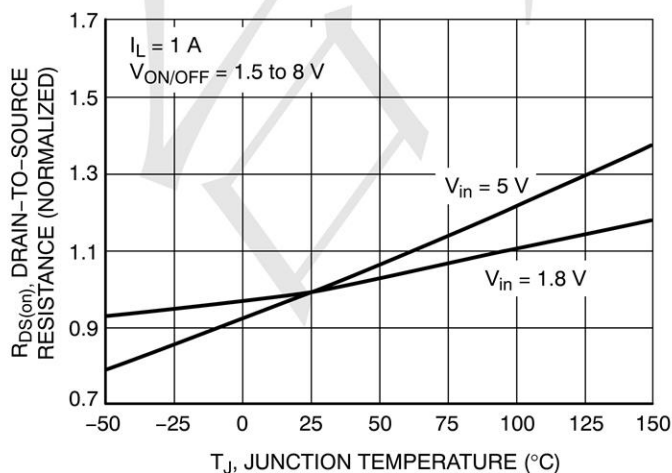


Figure 6. Normalized On-Resistance Variation with Temperature

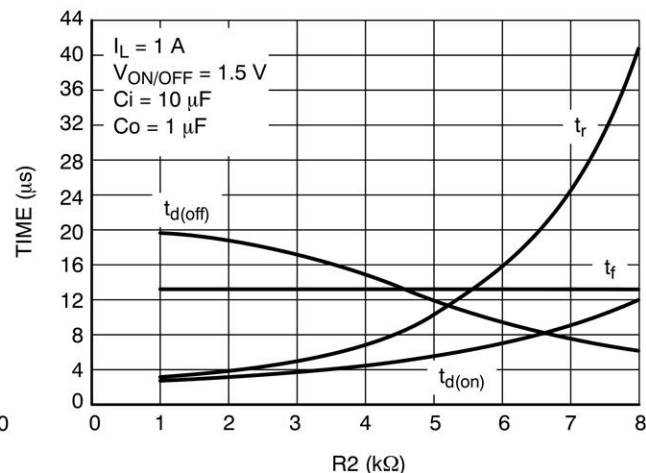


Figure 7. Switching Variation R_2 @ $V_{in} = 4.5\text{ V}$, $R_1 = 20\text{ k}\Omega$

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

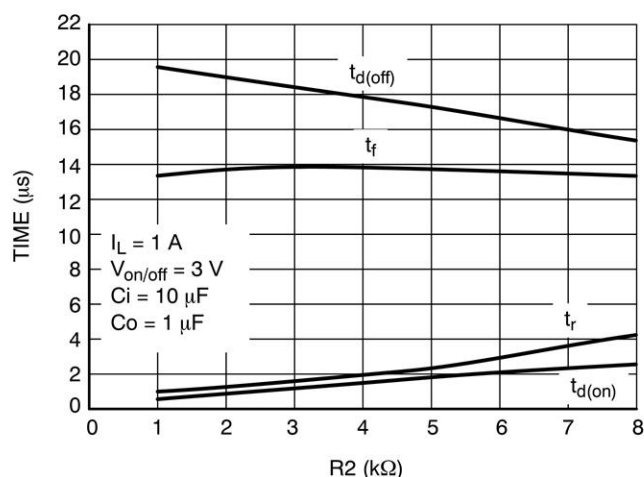


Figure 8. Switching Variation
R2 @ $V_{in} = 4.5\text{ V}$, $R_1 = 20\text{ k}\Omega$

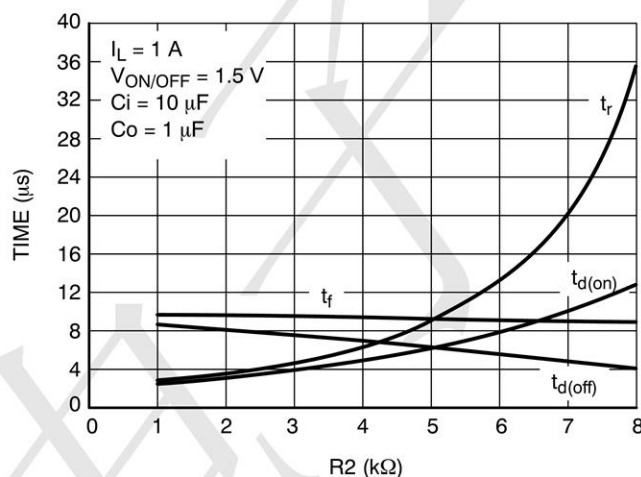


Figure 9. Switching Variation
R2 @ $V_{in} = 2.5\text{ V}$, $R_1 = 20\text{ k}\Omega$

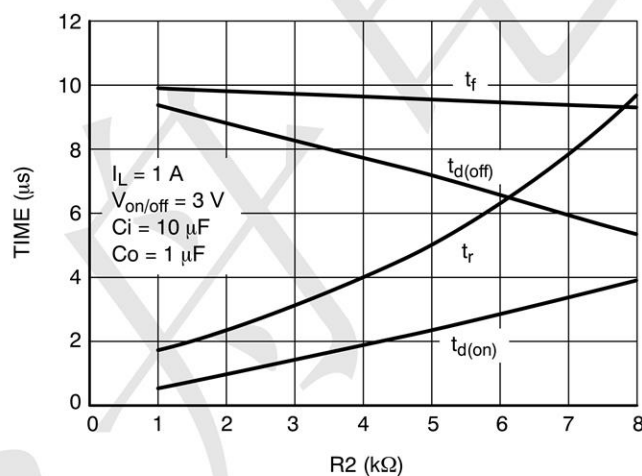


Figure 10. Switching Variation
R2 @ $V_{in} = 2.5\text{ V}$, $R_1 = 20\text{ k}\Omega$

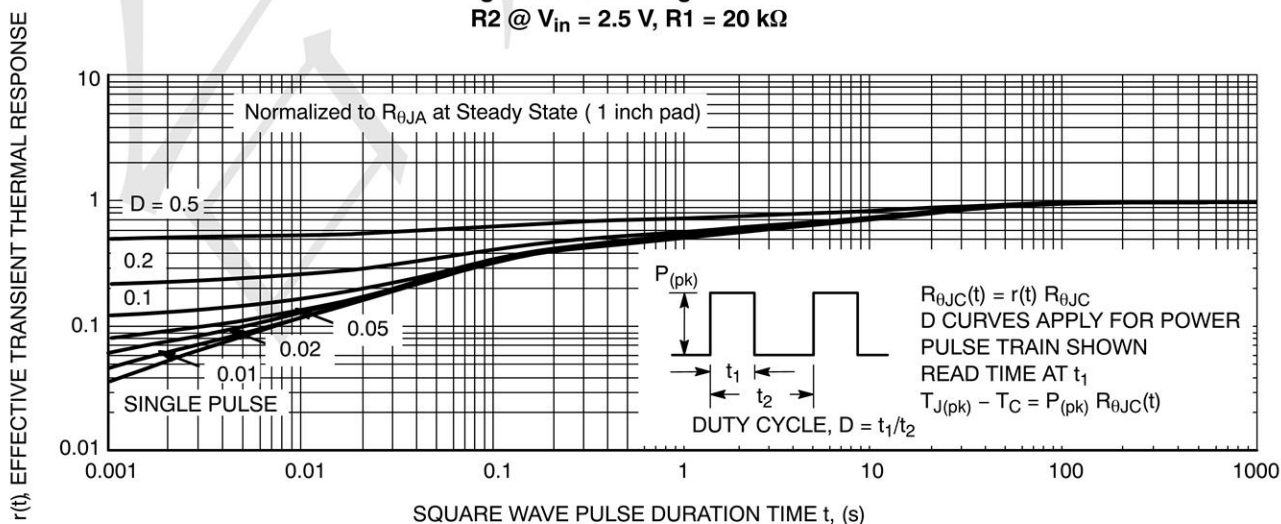
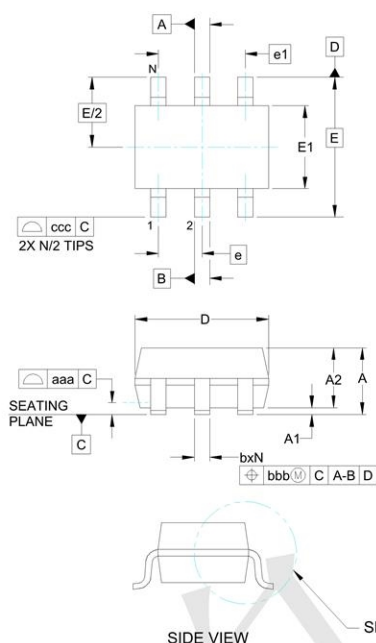


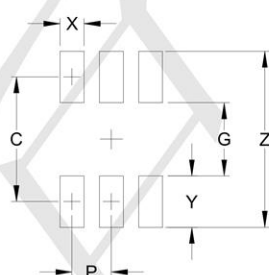
Figure 11. FET Thermal Response

Outline Drawing - SOT-363



DIM	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	-	-	.043	-	-	1.10
A1	.000	-	.004	0.00	-	0.10
A2	.028	.035	.039	0.70	0.90	1.00
b	.006	-	.012	0.15	-	0.30
c	.003	-	.009	0.08	-	0.22
D	.071	.079	.087	1.80	2.00	2.20
E	.045	.049	.053	1.15	1.25	1.35
E1	.083	BSC		2.10	BSC	
e	.026	BSC		0.65	BSC	
e1	.051			1.30	BSC	
L	.010	.014	.018	0.26	0.36	0.46
L1		(.017)			(0.42)	
N	6			6		
01	0°	-	8°	0°	-	8°
aaa		.004			0.10	
bbb		.004			0.10	
ccc		.012			0.30	

Land Pattern - SOT-363



DIMENSIONS		
DIM	INCHES	MILLIMETERS
C	(.073)	(1.85)
G	.039	1.00
P	.026	0.65
X	.016	0.40
Y	.033	0.85
Z	.106	2.70