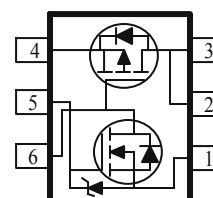
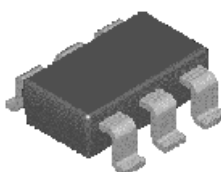


**P & N-Channel Load Switch MOSFET**

These miniature surface mount MOSFETs utilize High Cell Density process. Low  $r_{DS(on)}$  assures minimal power loss and conserves energy, making this device ideal for use in power management circuitry. Typical applications are power switching, power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

- Low  $r_{DS(on)}$  Provides Higher Efficiency and Extends Battery Life
- Miniature TSOP-6 Surface Mount Package Saves Board Space
- Control N-Channel MOSFET include a Zener Diode to protect the ESD requirement

PRODUCT SUMMARY		
V <sub>IN</sub> (V)	r <sub>DS(on)</sub> (OHM)	I <sub>L</sub> (A)
5.0	0.068 @ V <sub>DROP</sub> = 0.2V	2.8
2.5	0.100 @ V <sub>DROP</sub> = 0.2V	1.9



ABSOLUTE MAXIMUM RATINGS (T <sub>A</sub> = 25 °C UNLESS OTHERWISE NOTED)			
Parameter	Symbol	Rating	Units
Input Voltage Range	V <sub>IN</sub>	2.5 - 8	V
On/Off Voltage Range	V <sub>ON/OFF</sub>	1.5 - 8	
Continuous Load Current <sup>a</sup>	T <sub>A</sub> =25°C	-2.5	A
	T <sub>A</sub> =70°C	-1.8	
Pulsed Drain Current <sup>b</sup>	I <sub>LM</sub>	-10	
Electrostatic Discharge Rating	ESD	6	KV
Power Dissipation <sup>a</sup>	T <sub>A</sub> =25°C	0.7	W
	T <sub>A</sub> =70°C	0.56	
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to 150	°C

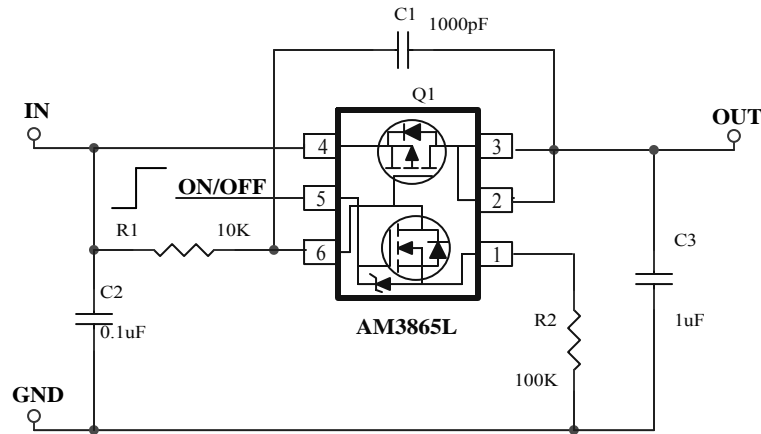
THERMAL RESISTANCE RATINGS			
Parameter	Symbol	Maximum	Units
Maximum Junction-to-Ambient <sup>a</sup>	t ≤ 5 sec	180	°C/W
	Steady-State	235	

Notes

- a. Surface Mounted on 1" x 1" FR4 Board.
- b. Pulse width limited by maximum junction temperature

SPECIFICATIONS ( $T_A = 25^{\circ}\text{C}$ UNLESS OTHERWISE NOTED)						
Parameter	Symbol	Test Conditions	Limits			Unit
			Min	Typ	Max	
<b>Switching On Characteristics</b>						
Conduction Voltage	$V_{\text{DROP}}$	$V_{\text{IN}} = 5\text{ V}, V_{\text{ON/OFF}} = 3.3\text{ V}, I_{\text{L}} = 2.8\text{ A}$		0.13	0.2	V
		$V_{\text{IN}} = 5\text{ V}, V_{\text{ON/OFF}} = 3.3\text{ V}, I_{\text{L}} = 1.9\text{ A}$		0.15	0.2	
Loading Current	$I_{\text{L}}$	$V_{\text{DROP}} = 0.2\text{ V}, V_{\text{IN}} = 5\text{ V}, V_{\text{ON/OFF}} = 3.3\text{ V}$	-2.8			A
		$V_{\text{DROP}} = 0.2\text{ V}, V_{\text{IN}} = 2.5\text{ V}, V_{\text{ON/OFF}} = 3.3\text{ V}$	-1.9			
Static On Resistance	$R_{(\text{ON})}$	$V_{\text{GS}} = -5\text{ V}, I_{\text{D}} = -2.5\text{ A}$		47	69	m $\Omega$
		$V_{\text{GS}} = -2.5\text{ V}, I_{\text{D}} = -2.0\text{ A}$		73	100	
<b>Switching Off Characteristics</b>						
Forward Leakage Current	$I_{\text{FL}}$	$V_{\text{IN}} = 8\text{ V}, V_{\text{ON/OFF}} = 0\text{ V},$			1	$\mu\text{A}$

### Application In Load Switch



Notes

- a. Pulse test:  $PW \leq 300\mu\text{s}$  duty cycle  $\leq 2\%$ .
- b. Guaranteed by design, not subject to production testing.

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### Typical Electrical Characteristics

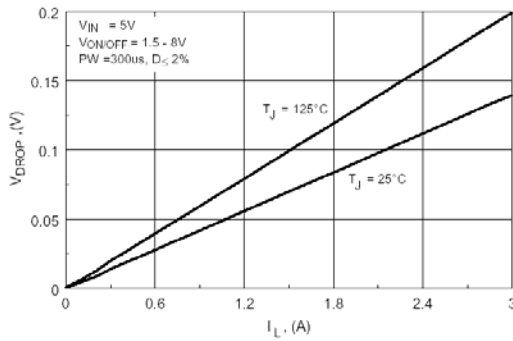


Figure 1. Conduction Voltage Drop Variation with Load Current.

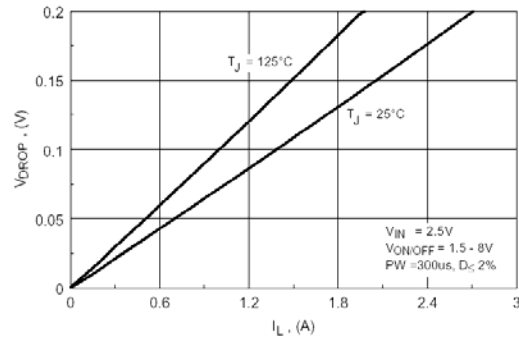


Figure 2. Conduction Voltage Drop Variation with Load Current.

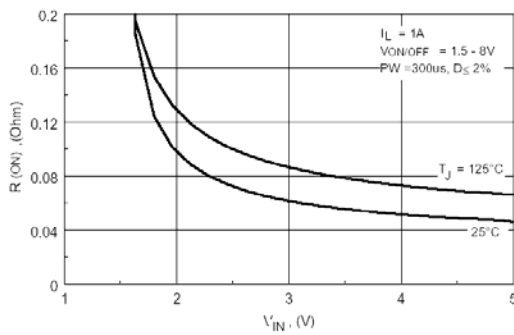


Figure 3. On-Resistance Variation with Input Voltage.

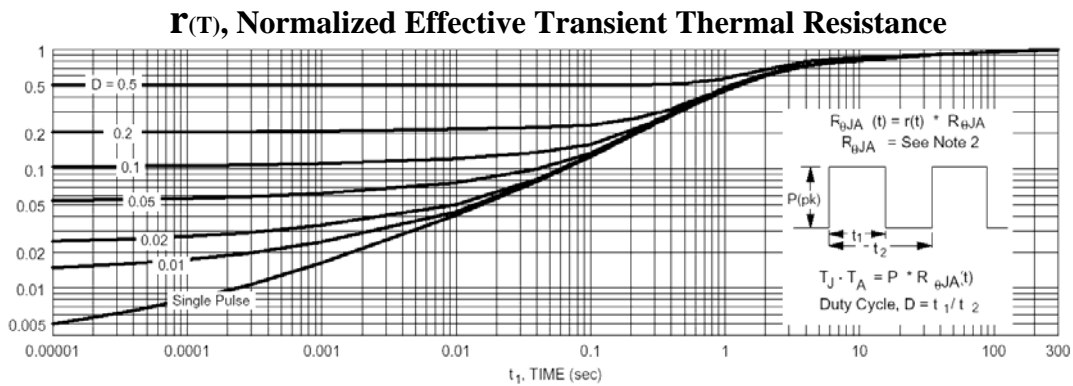
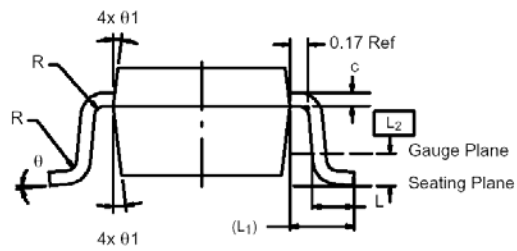
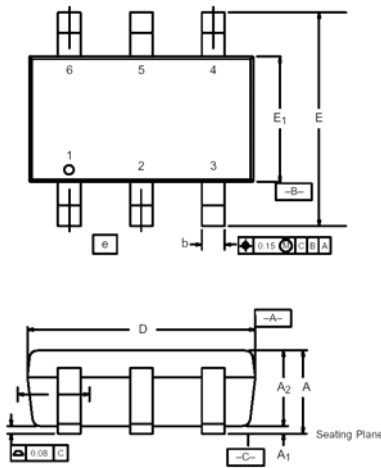


Figure 4. Transient Thermal Response Curve

Package Information

TSOP-6: 6LED



Dim	MILLIMETERS			INCHES		
	Min	Nom	Max	Min	Nom	Max
A	0.91	–	1.10	0.036	–	0.043
A <sub>1</sub>	0.01	–	0.10	0.0004	–	0.004
A <sub>2</sub>	0.84	–	1.00	0.033	0.038	0.039
b	0.30	0.32	0.45	0.012	0.013	0.018
c	0.10	0.15	0.20	0.004	0.006	0.008
D	2.95	3.05	3.10	0.116	0.120	0.122
E	2.70	2.85	2.98	0.106	0.112	0.117
E <sub>1</sub>	1.55	1.65	1.70	0.061	0.065	0.067
e	1.00 BSC			0.0394 BSC		
L	0.35	–	0.50	0.014	–	0.020
L <sub>1</sub>	0.60 Ref			0.024 Ref		
L <sub>2</sub>	0.25 BSC			0.010 BSC		
R	0.10	–	–	0.004	–	–
θ	0°	4°	8°	0°	4°	8°
θ <sub>1</sub>	7° Nom			7° Nom		