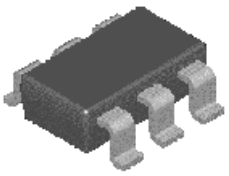
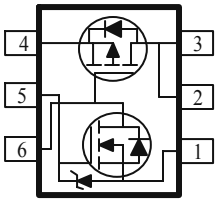
P & N-Channel Load Switch MOSFET

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_{IN} (V)	$r_{DS(on)}$ (OHM)	I_L (A)
5.0	0.068 @ V_{DROP} = 0.2V	2.8
2.5	0.100 @ V_{DROP} = 0.2V	1.9





ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C UNLESS OTHERWISE NOTED)				
Parameter		**Symbol**	**Rating**	**Units**
Input Voltage Range		V_{IN}	2.5 - 8	V
On/Off Voltage Range		$V_{ON/OFF}$	1.5 - 8	
Continuous Load Current[a]	T_A=25°C	I_L	-2.5	A
	T_A=70°C		-1.8	
Pulsed Drain Current[b]		I_{LM}	-10	
Electrostatic Discharge Rating		ESD	6	KV
Power Dissipation[a]	T_A=25°C	P_D	0.7	W
	T_A=70°C		0.56	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS				
Parameter		**Symbol**	**Maximum**	**Units**
Maximum Junction-to-Ambient[a]	t <= 5 sec	R_{THJA}	180	°C/W
	Steady-State		235	

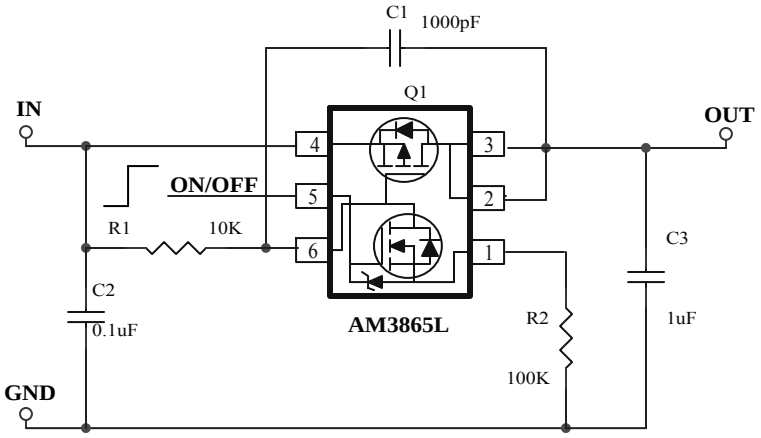
Notes

a. Surface Mounted on 1” x 1” FR4 Board.

b. Pulse width limited by maximum junction temperature

SPECIFICATIONS (T_A = 25°C UNLESS OTHERWISE NOTED)						
Parameter	**Symbol**	**Test Conditions**	**Limits**			**Unit**
			Min	**Typ**	**Max**	
Switching On Characteristics						
Conduction Voltage	V_{DROP}	V_{IN} = 5 V, $V_{ON/OFF}$ = 3.3 V, IL = 2.8 A		0.13	0.2	V
		V_{IN} = 5 V, $V_{ON/OFF}$ = 3.3 V, IL = 1.9 A		0.15	0.2	
Loading Current	I_L	V_{DROP} = 0.2 V, Vin = 5 V, $V_{ON/OFF}$ = 3.3 V	-2.8			A
		V_{DROP} = 0.2 V, Vin = 2.5 V, $V_{ON/OFF}$ = 3.3 V	-1.9			
Static On Resistance	$R_{(ON)}$	V_{GS} = -5 V, I_D = -2.5 A		47	69	mΩ
		V_{GS} = -2.5 V, I_D = -2.0 A		73	100	
Switching Off Characteristics						
Forward Leakage Current	I_{FL}	V_{IN} = 8 V, $V_{ON/OFF}$ = 0 V,			1	μA

Application In Load Switch



Notes

a. Pulse test: PW <= 300us duty cycle <= 2%.

b. Guaranteed by design, not subject to production testing.

Typical Electrical Characteristics

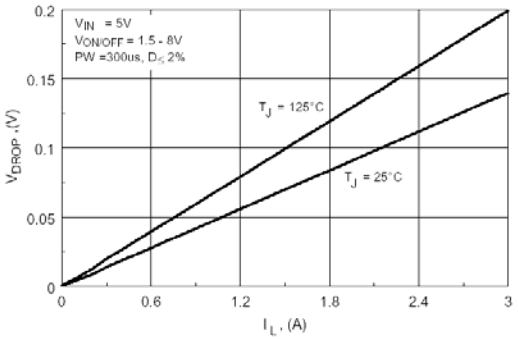


Figure 1. Conduction Voltage Drop Variation with Load Current.

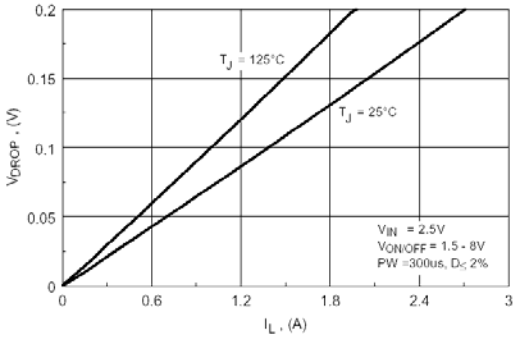


Figure 2. Conduction Voltage Drop Variation with Load Current.

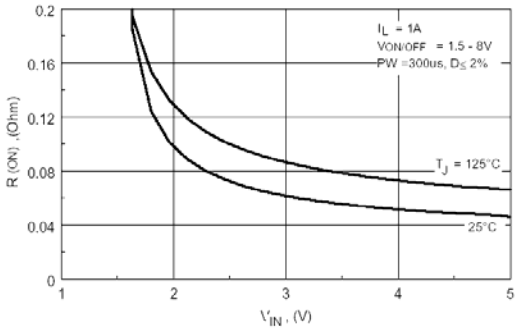


Figure 3. On-Resistance Variation with Input Voltage.

r(T), Normalized Effective Transient Thermal Resistance

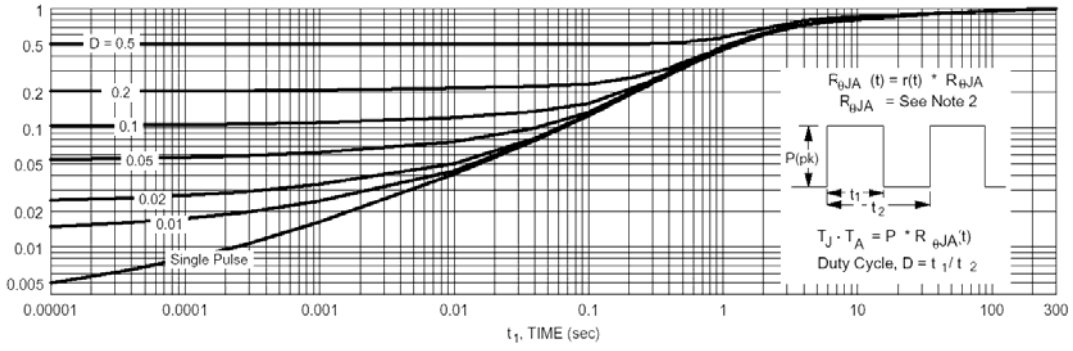
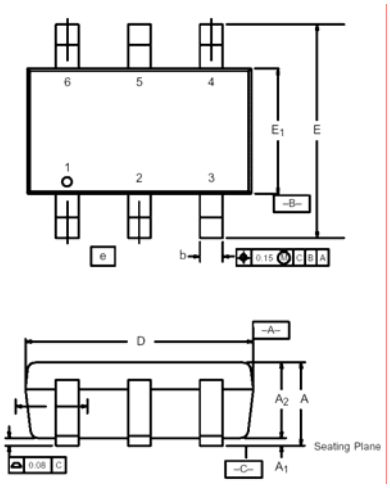
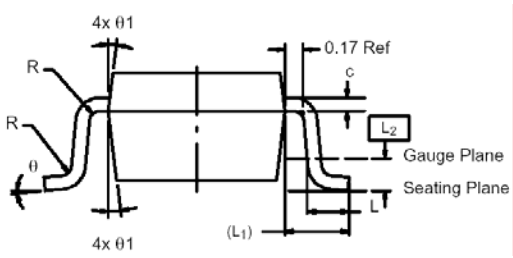


Figure 4. Transient Thermal Response Curve

Package Information

TSOP-6: 6LED





Dim	MILLIMETERS			INCHES		
	Min	Nom	Max	Min	Nom	Max
A	0.91	–	1.10	0.036	–	0.043
A_1	0.01	–	0.10	0.0004	–	0.004
A_2	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_1	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_1	0.60 Ref			0.024 Ref		
L_2	0.25 BSC			0.010 BSC		
R	0.10	–	–	0.004	–	–
θ	0°	4°	8°	0°	4°	8°
θ_1	7° Nom			7° Nom		