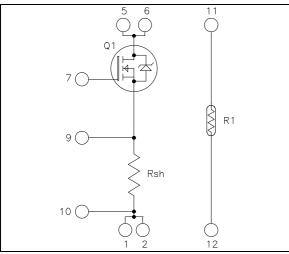
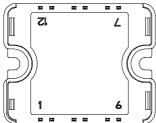


APTML100U60R020T1AG

Linear MOSFET Power Module





Pins 1/2; 5/6 must be shorted together

$$\begin{split} V_{DSS} &= 1000V \\ R_{DSon} &= 600 m\Omega \text{ typ @ Tj} = 25^{\circ}C \\ I_D &= 20A \text{ @ Tc} = 25^{\circ}C \end{split}$$

Application

• Electronic load dedicated to power supplies and battery discharge testing

Features

- Linear MOSFET
- Very low stray inductance
- Internal thermistor for temperature monitoring
- High level of integration
- AlN substrate for improved thermal performance

Benefits

- Direct mounting to heatsink (isolated package)
- easy series and parallels combinations for power and voltage improvements
- Low junction to case thermal resistance
- Solderable terminals both for power and signal for easy PCB mounting
- Low profile
- RoHS Compliant

Absolute maximum ratings

Symbol	Parameter	Max ratings	Unit	
$V_{ m DSS}$	Drain - Source Breakdown Voltage	1000	V	
Ţ	Continuous Drain Current	$T_c = 25^{\circ}C$	20	
I_D	Continuous Drain Current	$T_c = 80$ °C	14	A
I_{DM}	Pulsed Drain current		74	
V_{GS}	Gate - Source Voltage	±30	V	
R_{DSon}	Drain - Source ON Resistance	720	mΩ	
P_{D}	Maximum Power Dissipation 1	$T_c = 25^{\circ}C$	520	W

• In saturation mode

CAUTION: These Devices are sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed. See application note APT0502 on www.microsemi.com



All ratings @ $T_i = 25$ °C unless otherwise specified

Electrical Characteristics

Symbol	Characteristic	Test Conditions		Min	Typ	Max	Unit	
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 1000V ; V_{GS} = 0V$	$T_j = 25$ °C			250	^	
		$V_{DS} = 800V ; V_{GS} = 0V$	$T_j = 125$ °C			1000	μΑ	
R _{DS(on)}	Drain – Source on Resistance	$V_{GS} = 10V, I_D = 10A$			600	720	mΩ	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{GS} = V_{DS}, I_{D} = 2.5 \text{mA}$		2		4	V	
I_{GSS}	Gate – Source Leakage Current	$V_{GS} = \pm 30 \text{ V}$				±100	nA	

Dynamic Characteristics

Symbol	Characteristic	Test Conditions	Min	Тур	Max	Unit
C_{iss}	Input Capacitance	$V_{GS} = 0V$		6000		
C_{oss}	Output Capacitance	$V_{\rm DS} = 25V$		775		pF
C_{rss}	Reverse Transfer Capacitance	f = 1MHz		285		

Shunt Electrical Characteristics

Symbol	Characteristic		Min	Typ	Max	Unit
R_{sh}	Resistance value			20		mΩ
T_{sh}	Tolerance			2		%
P_{sh}	L L Oad Capacity	T _C =25°C			20	W
		T _C =80°C			10	vv
I_{sh}	Current capacity	T _C =25°C			31	۸
		T _C =80°C			22	Α

Temperature sensor PTC

Symbol	Characteristic		Min	Typ	Max	Unit
R ₂₅	Resistance @ 25°C		1980		2020	Ω
R_{100}/R_{25}	Resistance ratio	Tamb=100°C & 25°C	1.676	1.696	1.716	
R_{-55}/R_{25}	Resistance ratio	Tamb=-55°C & 25°C	0.48	0.49	0.50	
В	Temperature coefficient			7900		ppm/K

Thermal and package characteristics

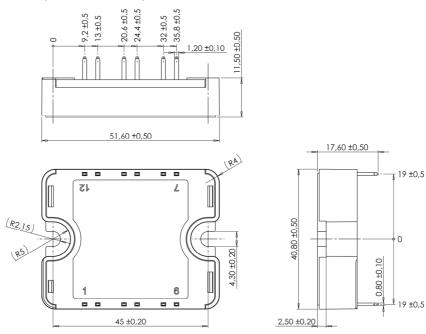
Symbol	Characteristic		Min	Тур	Max	Unit	
R_{thJC}	Junction to Case Thermal Resistance		MOSFET			0.24	°C/W
V_{ISOL}	RMS Isolation Voltage, any terminal to case t =1 min, 50/60Hz		4000			V	
T_{J}	Operating junction temperature range		-40		150		
T_{STG}	Storage Temperature Range			-40		125	°C
$T_{\rm C}$	Operating Case Temperature			-40		100	
Torque	Mounting torque	To heatsink	M4	2		3	N.m
Wt	Package Weight				80	g	

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SP1 Package outline (dimensions in mm)



See application note 1904 - Mounting Instructions for SP1 Power Modules on www.microsemi.com



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