Analog Power AM2371P

P-Channel 100-V (D-S) MOSFET

Key Features:

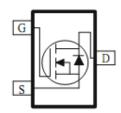
- Low r_{DS(on)} trench technology
- · Low thermal impedance
- · Fast switching speed

Typical Applications:

- PoE Power Sourcing Equipment
- PoE Powered Devices
- Telecom DC/DC converters
- White LED boost converters

PRODUCT SUMMARY			
V _{DS} (V)	$r_{DS(on)}(\Omega)$	I _D (A)	
-100	1.2 @ V _{GS} = -10V	-1	
-100	1.3 @ V _{GS} = -4.5V	-0.9	





ABSOLUTE MAXIMUM RATINGS (T _A = 25°C UNLESS OTHERWISE NOTED)					
Parameter			Limit	Units	
Drain-Source Voltage		V _{DS}	-100	V	
Gate-Source Voltage		V_{GS}	±20	V	
Continuous Dusin Commenta	T _A =25°0		-1		
Continuous Drain Current ^a	T _A =70°0		-0.8	Α	
Pulsed Drain Current ^b	-	I _{DM}	-10		
Continuous Source Current (Diode Conduction) a		I _S	-1.6	Α	
Device Discinction ^a	T _A =25°0		1.3	W	
Power Dissipation ^a	T _A =70°0		0.8	VV	
Operating Junction and Storage Temperature Range		T_J, T_{stq}	-55 to 150	°C	

THERMAL RESISTANCE RATINGS						
Parameter		Symbol	Maximum	Units		
Maximum Junction-to-Ambient ^a	t <= 10 sec	$R_{\theta JA}$	100	°C/W		
Maximum Junction-to-Ambient	Steady State		166			

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Notes

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

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Parameter	Symbol	Test Conditions	Min	Тур	Max	Unit
Static						
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, ID = -250 uA	-1		-3.5	V
Gate-Body Leakage	I _{GSS}	$V_{DS} = 0 \text{ V}, V_{GS} = \pm 20 \text{ V}$			±100	nA
Zero Gate Voltage Drain Current		$V_{DS} = -80 \text{ V}, V_{GS} = 0 \text{ V}$			1	uA
Zero Gate Voltage Drain Current	I _{DSS}	$V_{DS} = -80 \text{ V}, V_{GS} = 0 \text{ V}, T_{J} = 55^{\circ}\text{C}$			25	
On-State Drain Current	I _{D(on)}	$V_{DS} = -10 \text{ V}, V_{GS} = -10 \text{ V}$	-10			Α
Drain-Source On-Resistance	r	$V_{GS} = -10 \text{ V}, I_{D} = -1 \text{ A}$			1.2	Ω
	r _{DS(on)}	$V_{GS} = -4.5 \text{ V}, I_D = -0.9 \text{ A}$			1.3	
Forward Transconductance	g _{fs}	$V_{DS} = -15 \text{ V}, I_{D} = -1 \text{ A}$		5		S
Diode Forward Voltage	V_{SD}	$I_S = -0.8 \text{ A}, V_{GS} = 0 \text{ V}$		-0.81		V
Dynamic						
Total Gate Charge	Q_g	$V_{DS} = -50 \text{ V}, V_{GS} = -4.5 \text{ V}, I_{D} = -1 \text{ A}$		3.7		nC
Gate-Source Charge	Q_gs			1.1		
Gate-Drain Charge	Q_{gd}			1.7		
Turn-On Delay Time	t _{d(on)}			3.5		
Rise Time	t _r	V_{DD} = -50 V, R_L = 50 Ω , I_D = -1 A,		3.8		n C
Turn-Off Delay Time	$t_{d(off)}$	V_{GEN} = -10 V, R_{GEN} = 6 Ω		15.5		nS
Fall-Time	t _f			10.3		
Input Capacitance	C_{iss}			358		
Output Capacitance	C _{oss}	$V_{DS} = -15 \text{ V}, V_{GS} = 0 \text{ V}, f = 1 \text{ MHz}$		54		pF
Reverse Transfer Capacitance	C _{rss}	<u> </u>		29		

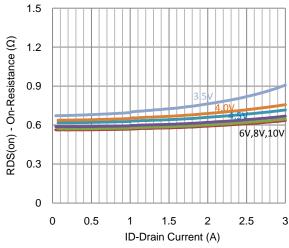
Notes

- a. Pulse test: PW <= 300us duty cycle <= 2%.
- b. Guaranteed by design, not subject to production testing.

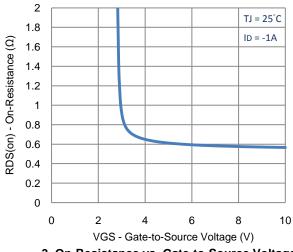
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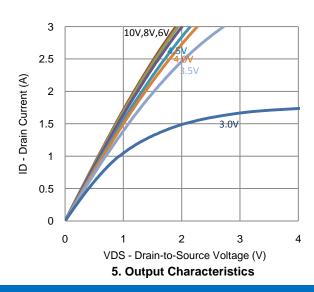
Typical Electrical Characteristics

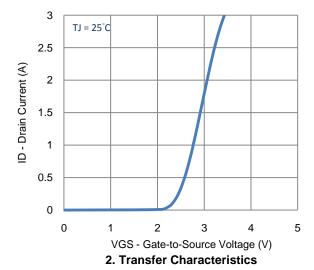


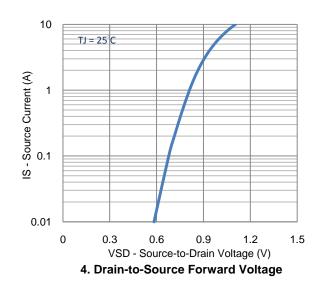
1. On-Resistance vs. Drain Current

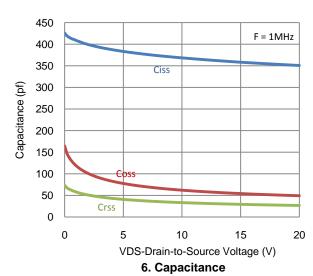


3. On-Resistance vs. Gate-to-Source Voltage



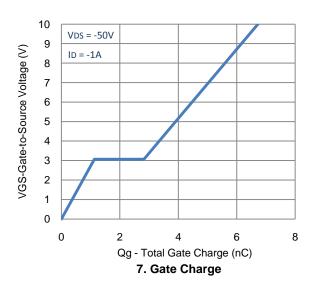


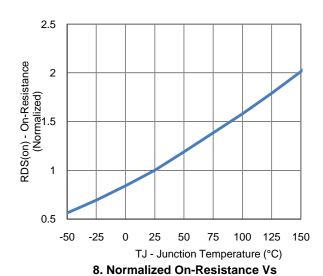


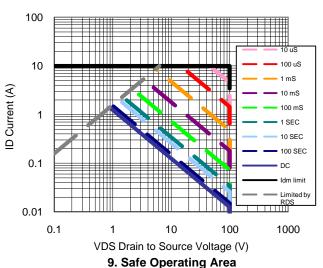


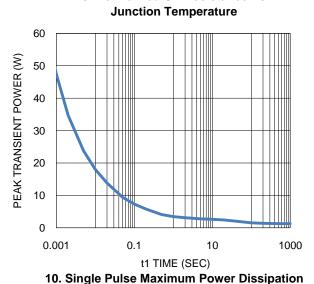
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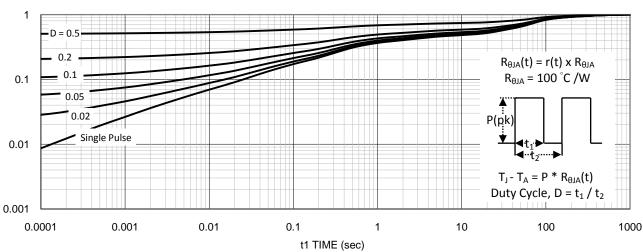
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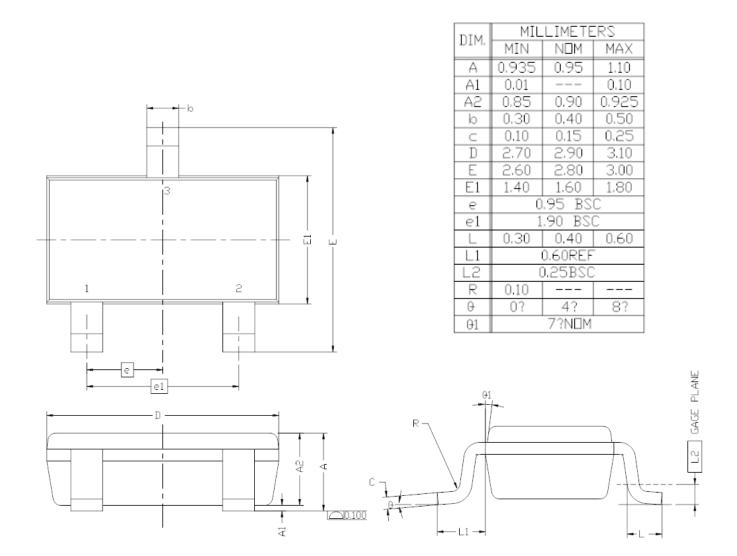




11. Normalized Thermal Transient Junction to Ambient

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Package Information



Note:

- 1. All Dimension Are In mm.
- 2. Package Body Sizes Exclude Mold Flash, Protrusion Or Gate Burrs. Mold Flash, Protrusion Or Gate Burrs Shall Not Exceed 0.10 mm Per Side.
- 3. Package Body Sizes Determined At The Outermost Extremes Of The Plastic Body Exclusive Of Mold Flash, Tie Bar Burrs, Gate Burrs And Interlead Flash, But Including Any Mismatch Between The Top And Bottom Of The Plastic Body.
- 4. The Package Top May Be Smaller Than The Package Bottom.
- Dimension "B" Does Not Include Dambar Protrusion. Allowable Dambar Protrusion Shall Be 0.08 mm Total In Excess
 Of "B" Dimension At Maximum Material Condition. The Dambar Cannot Be Located On The Lower Radius Of The
 Foot.