



DESCRIPTION

$V_{DS} = -30V$

$V_{GS} = \pm 20V$

$I_D(A) = -4.3A$

$R_{DS(ON)} = 38m\Omega(Typ.) @ V_{GS} = -10V$

$R_{DS(ON)} = 58m\Omega(Typ.) @ V_{GS} = -4.5V$

The AM3407A is available in SOT-23 package.

ORDERING INFORMATION

Package Type	Part Number	
SOT-23 SPQ: 3,000pcs/Reel	E3	AM3407AE3R
		AM3407AE3VR
Note	V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products		

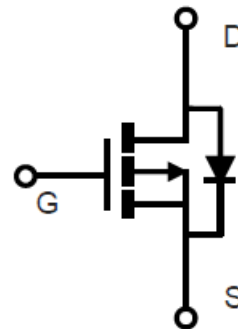
FEATURES

- Available in SOT-23 package

APPLICATION

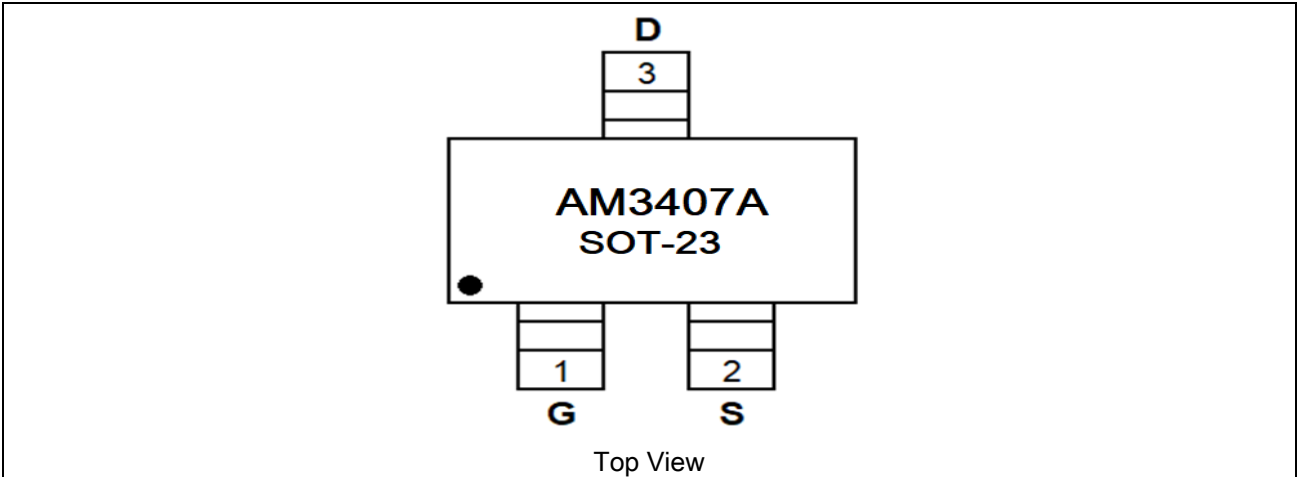
- Portable Equipment
- Power Management
- Load Switch

P CHANNEL MOSFET





PIN DESCRIPTION



Pin #	Symbol	Function
1	G	Gate
2	S	Source
3	D	Drain



ABSOLUTE MAXIMUM RATINGS

T_A=25°C, unless otherwise noted

V _{DSS} , Drain-Source Voltage		-30V
V _{GSS} , Gate-Source Voltage		±20V
I _D , Continuous Drain Current ^{NOTE1}	T _A =25°C	-4.3A
	T _A =70°C	-3.6A
I _{DM} , Pulsed Drain Current ^{NOTE2}		-20A
P _D , Power Dissipation ^{NOTE1}	T _A =25°C	1.5W
	T _A =70°C	0.9W
T _J , Operation Junction Temperature		-55°C ~150°C
T _{STG} , Storage Temperature Range		-55°C ~150°C

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

THERMAL CHARACTERISTICS

Parameter		Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance Junction to Ambient ^{NOTE1}	t ≤ 10s	R _{θJA}	-	-	85	°C/W
Thermal Resistance Junction to Ambient ^{NOTE1,3}	Steady-State		-	-	120	



ELECTRICAL CHARACTERISTICS

T_A=25°C, unless otherwise noted

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Parameters						
Drain-Source Breakdown Voltage	B _{VDSS}	V _{GS} =0V, I _D =-250μA	-30	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-1	-1.5	-2	V
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V	-	-	±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V, V _{GS} =0 T _J =25°C	-	-	-1	μA
		V _{DS} =-24V, V _{GS} =0 T _J =75°C	-	-	-10	
Drain-Source On-Resistance ^{NOTE4}	R _{DS(ON)}	V _{GS} =-10V, I _D =-4.3A	-	38	45	mΩ
		V _{GS} =-4.5V, I _D =-3A	-	58	68	
Forward Transconductance	G _{fs}	V _{DS} = -10V, I _D =-4.3A	-	11	-	S
Diode Characteristics						
Diode Forward Voltage ^{NOTE4}	V _{SD}	I _S =-1A, V _{GS} = 0V	-	-0.7	-1	V
Diode Continuous Forward Current	I _S		-	-	-4.3	A
Dynamic and Switching Parameters^{NOTE5}						
Total Gate Charge	Q _g	V _{DS} =-15V, V _{GS} =-10V, I _D =-4.3A	-	12.3	-	nC
Total Gate Charge(4.5V)	Q _g		-	6	-	
Gate-Source Charge	Q _{gs}		-	2.7	-	
Gate-Drain Charge	Q _{gd}		-	3.1	-	
Input Capacitance	C _{iss}	V _{DS} =-25V, V _{GS} =0V, f=1MHz	-	645	-	pF
Output Capacitance	C _{oss}		-	272	-	
Reverse Transfer Capacitance	C _{rss}		-	105	-	
Turn-On Time	t _{d(on)}	V _{DD} =-15V, V _{GEN} =-10V, R _G =3.3Ω, I _D =-4A	-	9	-	ns
	t _r		-	16.5	-	
Turn-Off Time	t _{d(off)}		-	22	-	
	t _f		-	21	-	

NOTE1: Surface mounted on FR4 board using 1 in² pad size.

NOTE2: Pulsed width limited by maximum junction temperature, T_{J(MAX)}=150°C (initial temperature T_J=25°C).

NOTE3: Using ≤ 10s junction-to-ambient thermal resistance is base on T_{J(MAX)}=150°C.

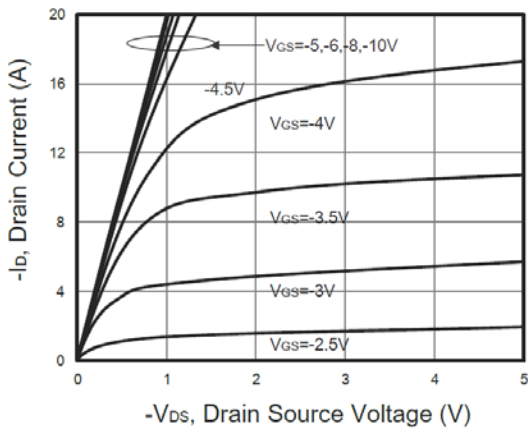
NOTE4: Pulse test width ≤300μs and duty cycle ≤ 2%.

NOTE5: Guaranteed by design, not subject to production testing.

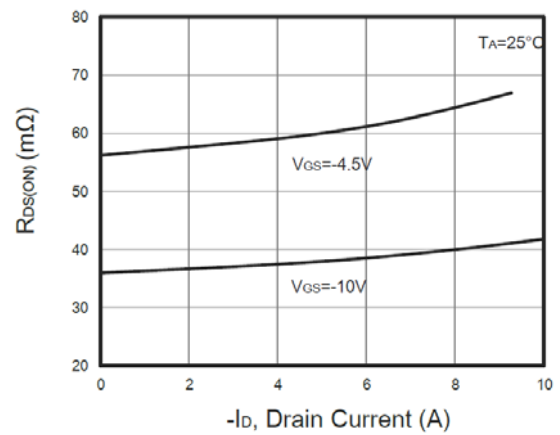


TYPICAL PERFORMANCE CHARACTERISTICS

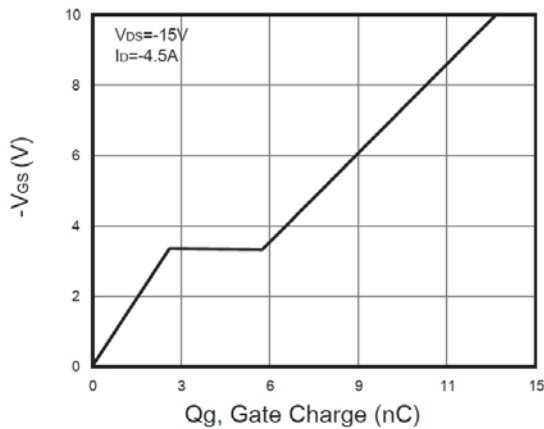
1. Output Characteristics



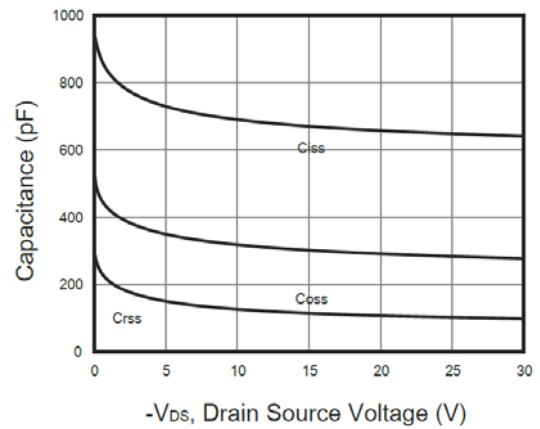
2. Drain-Source On Resistance



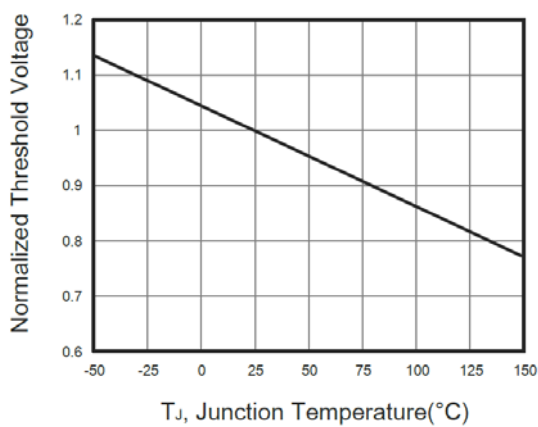
3. Gate Charge



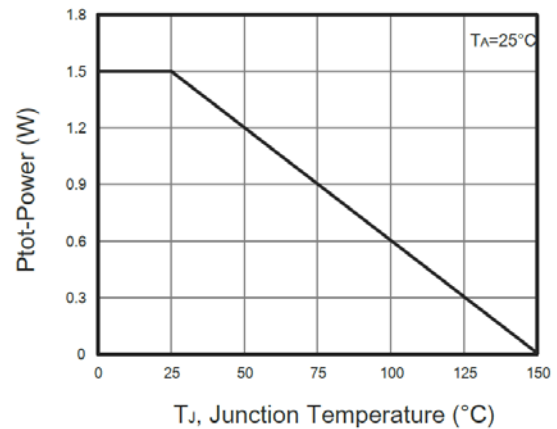
4. Capacitance



5. Gate Threshold Voltage

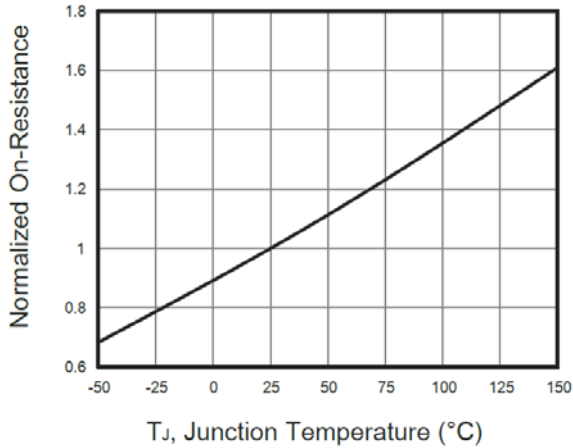


6. Power Dissipation

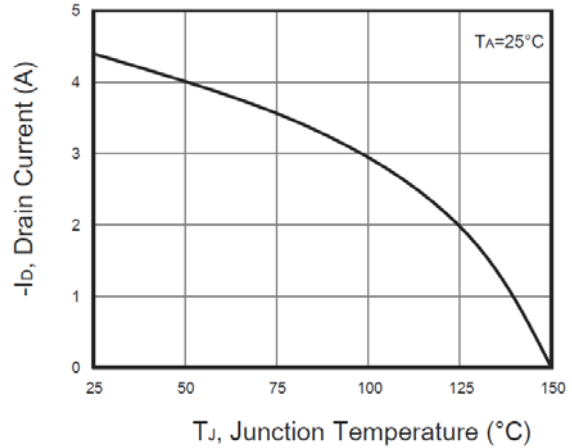




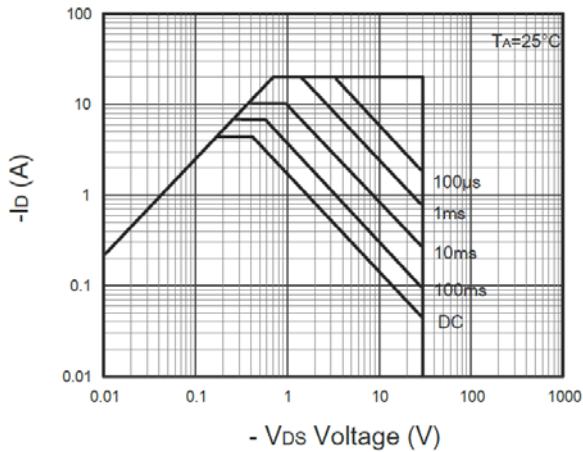
7. Drain-Source ON Resistance vs. Junction Temperature



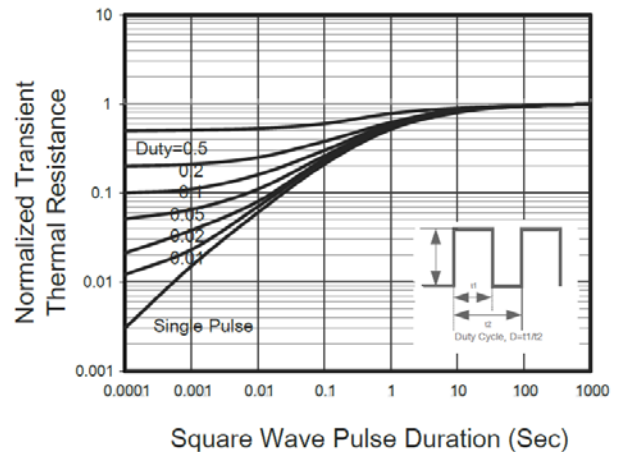
8. Drain Current vs. T_J



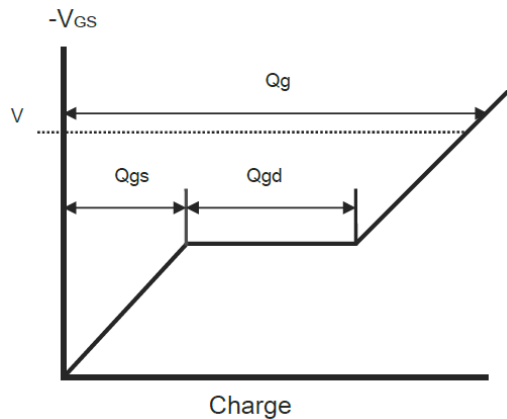
9. Maximum Safe Operation Area



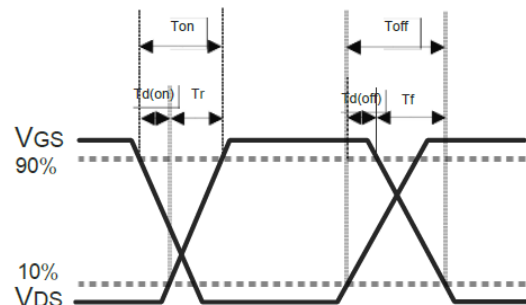
10. Thermal Transient Impedance



11. Gate Charge Waveform



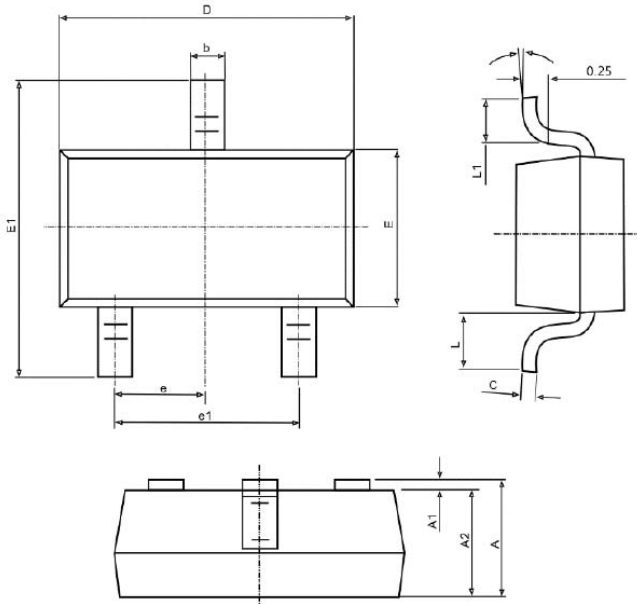
12. Switching Time Waveform



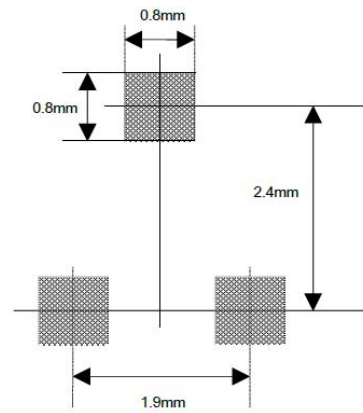


PACKAGE INFORMATION

Dimension in SOT-23 Package (Unit: mm)



Recommended Minimum Pad(mm)



Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.000	1.300	0.039	0.049
A1	0.000	0.100	0.000	0.004
A2	1.000	1.200	0.039	0.047
b	0.300	0.500	0.012	0.020
c	0.047	0.207	0.002	0.008
D	2.800	3.000	0.110	0.118
E	1.500	1.700	0.059	0.067
E1	2.600	3.000	0.102	0.118
e	0.950 TYP.		0.037 TYP.	
e1	1.900 TYP.		0.075 TYP.	
L1	0.250	0.500	0.010	0.022
L	0.550	0.650	0.021	0.039
θ	0°	8°	0°	8°



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