DESCRIPTION

The AM3407 is the P-Channel logic enhancement mode power field effect transistor is produced using high cell density. Advanced trench technology to provide excellent $R_{DS(ON)}$. This device is suitable for use as a load switch or in applications.

AM3407 is available in a SOT-23 package.

ORDERING INFORMATION

Package Type	Part Number	
SOT-23	E3	AM3407E3R
		AM3407E3VR
Note	V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products Suffix " V " means Halogen free Package		

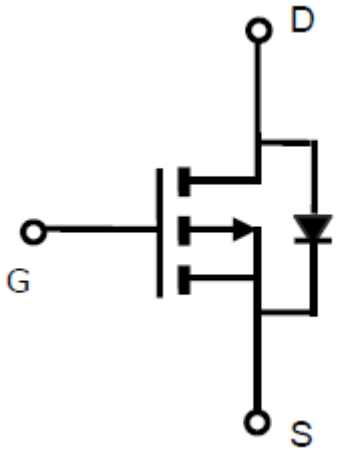
FEATURES

- -30V/-4.3A, $R_{DS(ON)}$=44mΩ(typ.)@V_{GS}=-10V
- -30V/-3.0A, $R_{DS(ON)}$=70mΩ(typ.)@V_{GS}=-4.5V
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and Maximum DC current capability
- Available in a SOT-23 package.

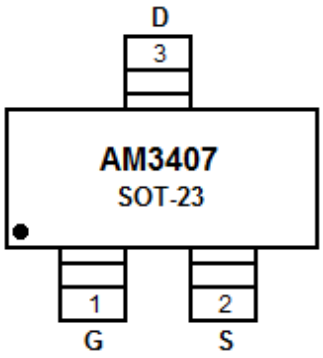
APPLICATIONS

- Cellular/Portable
- Load Switch

PIN DESCRIPTION



PIN DESCRIPTION



Top View

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 (V_{GS}=-10V)NOTE1	T_C=25°C	-4.3A
	T_C=70°C	-3.5A
I_{DM}, Pulsed Drain Current NOTE2		-20A
P_D, Power Dissipation	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

Stress beyond above listed “Absolute Maximum Ratings” may lead permanent damage to the device. These are stress ratings only and operations of the device at these or any other conditions beyond those indicated in the operational sections of the specifications are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

NOTE1: The value of $R_{\theta JA}$ is measured with the device mounted on 1in 2 FR-4 board with 2oz. Copper, in a still air environment with T_A=25°C.

NOTE2: The data tested by pulsed , pulse width≦300uS , duty cycle≦2%

THERMAL CHARACTERISTICS

Parameter		Symbol	Typ.	Max	Units
Thermal Resistance-Junction to Ambient	Steady-State	$R_{\theta JA}$	-	125	°C/W
Thermal Resistance Junction to Lead	Steady-State	$R_{\theta JL}$	-	80	°C/W

NOTE3: The $R_{\theta JA}$ is the sum of the thermal impedence from junction to lead $R_{\theta JL}$ and lead to ambient.

ELECTRICAL CHARACTERISTICS

T_J = 25°C, unless otherwise noted

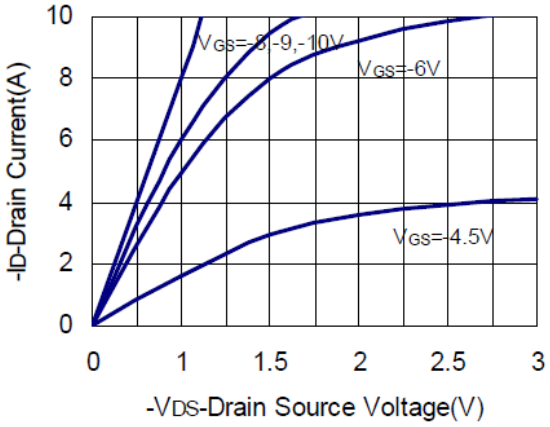
Parameter	Symbol	Conditions	Min	Typ.	Max	Units
Static Parameters						
Drain-Source Breakdown Voltage	$V_{(BV)DSS}$	V_{GS}=0V,I_D=-250μA	-30	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=-250μA	-1.0	-	-2.0	V
Gate Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±8V	-	-	±100	nA
Zero Gate Voltage, Drain-Source Leakage Current	I_{DSS}	V_{DS}=-24V,V_{GS}=0V T_J=25°C	-	-	-1	μA
		V_{DS}=-24V,V_{GS}=0V T_J=55°C	-	-	-5	
Drain-source On-Resistance[NOTE2]	$R_{DS(ON)}$	V_{GS}=-10V,I_D=-4.3A V_{GS}=-4.5V,I_D=-3.0A	-	44 70	54 85	mΩ
Forward Transconductance	g_{FS}	V_{DS}=-5V, I_D=-3A	-	11	-	S
Source-Drain Doide						
Diode Forward Voltage	V_{SD}	I_S=-1A,V_{GS}=0V	-	-0.7	-1.0	V
Continuous Source Current [NOTE1,3]	I_S		-	-	-3.5	A
Dynamic Parameters						
Total Gate Charge	$Q_{G(-4.5V)}$	V_{DS}=-15V,V_{GS}=-4.5V, I_D=-3.0A	-	6.5	-	nC
Gate-Source Charge	Q_{GS}		-	2.4	-	
Gate-Drain Charge	Q_{GD}		-	2.0	-	
Input Capacitance	C_{ISS}	V_{DS}=-15V,V_{GS}=0V, f=1MHz	-	592	-	pF
Output Capacitance	C_{OSS}		-	102	-	
Reverse Transfer Capacitance	C_{RSS}		-	81	-	
Turn-On Time	$t_{D(ON)}$	V_{DD}=-15V,I_D=-3A, V_{GEN}=-4.5V,R_G=3.3Ω	-	2.9	-	ns
	t_R		-	8.4	-	
Turn-Off Time	$t_{D(OFF)}$		-	40	-	μA
	t_F		-	6.2	-	

NOTE3: The data is theoretically the same as I_D and I_{DM}, in real applications , should be limited by total power dissipation
The EAS data show Max. rating. The test condition is V_{DD}=-25, V_{GS}=-10V, L=0.1mH

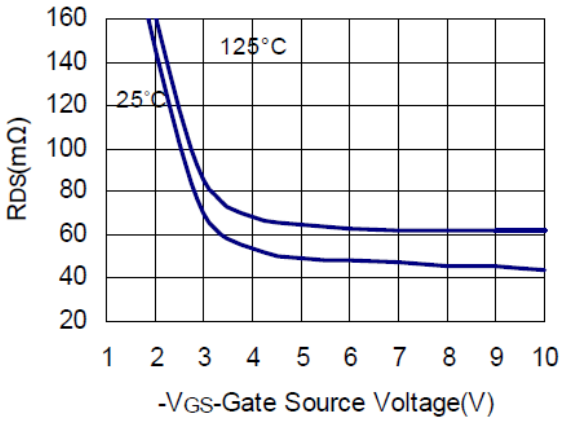
TYPICAL CHARACTERISTICS

25℃, unless Note

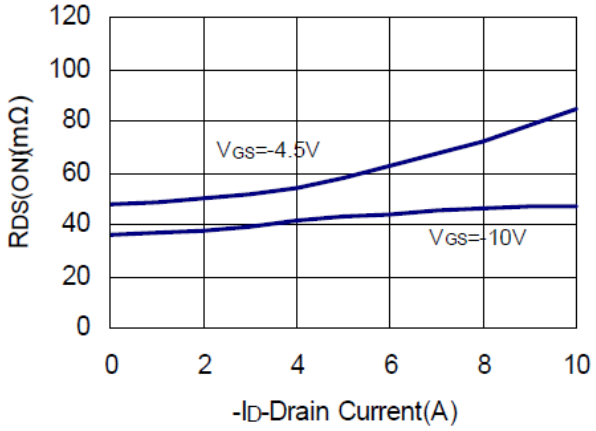
1. Output Characteristics



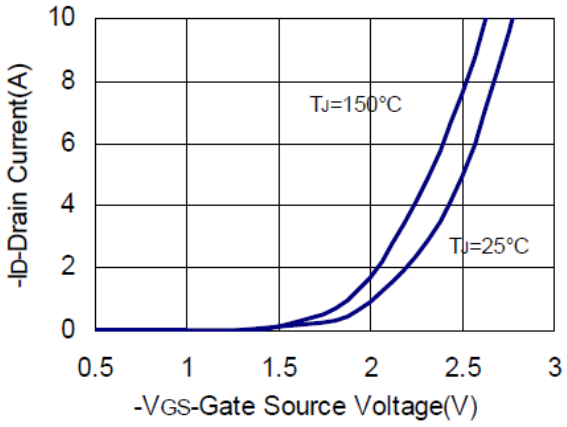
2. Drain-Source On Resistance



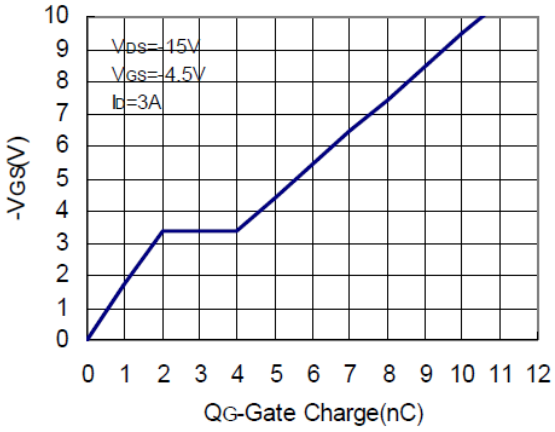
3. Drain Source On Resistance



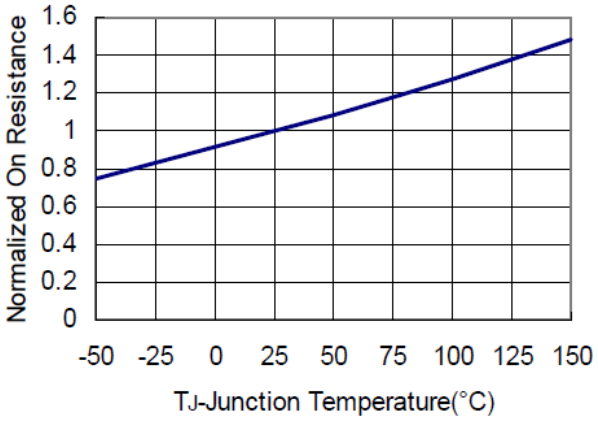
4. Transfer Characteristics



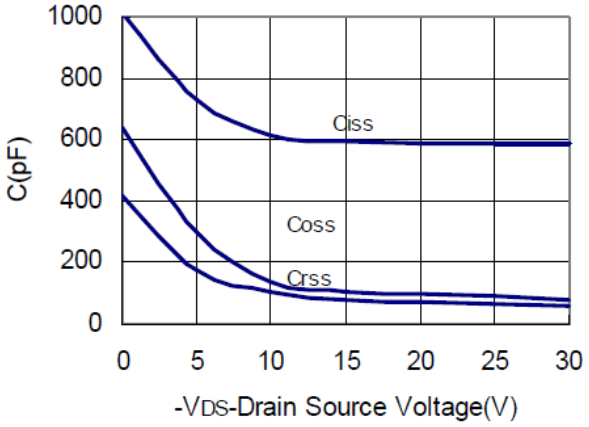
5. Gate Charge



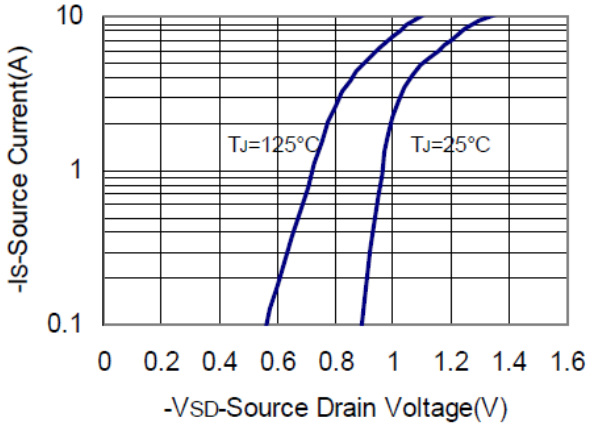
6. Drain Source On Resistance



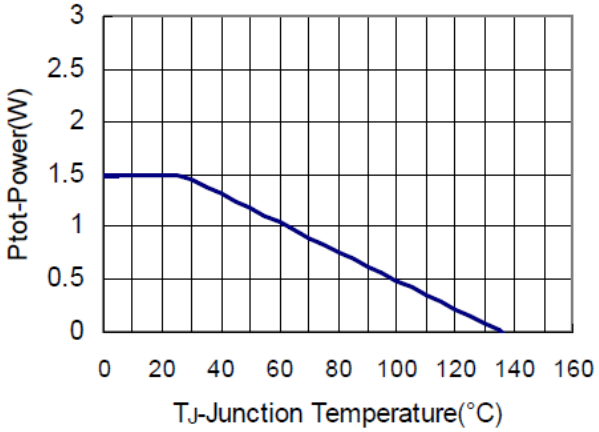
7. Capacitance



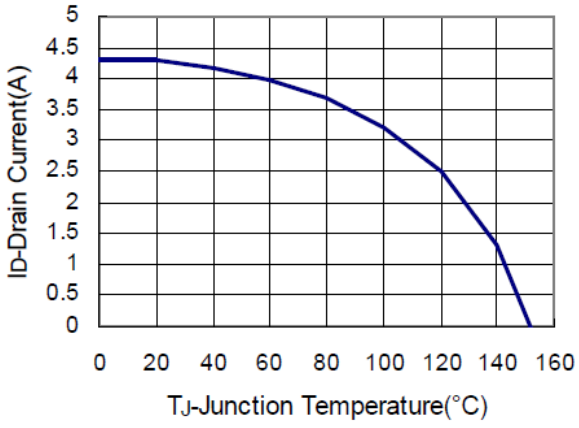
8. Source Drain Diode Forward



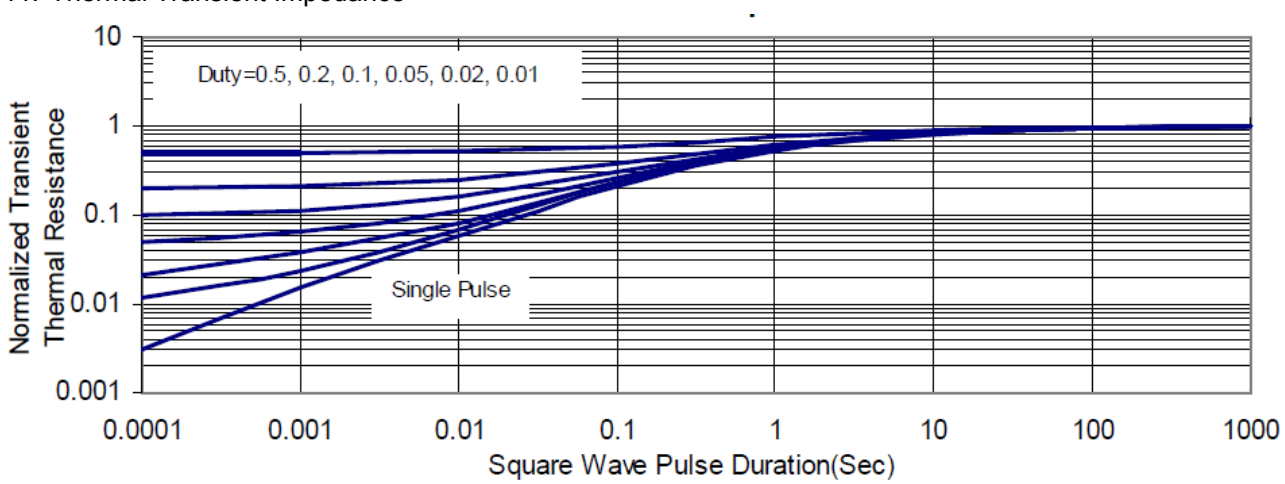
9. Power Dissipation



10. Drain Current

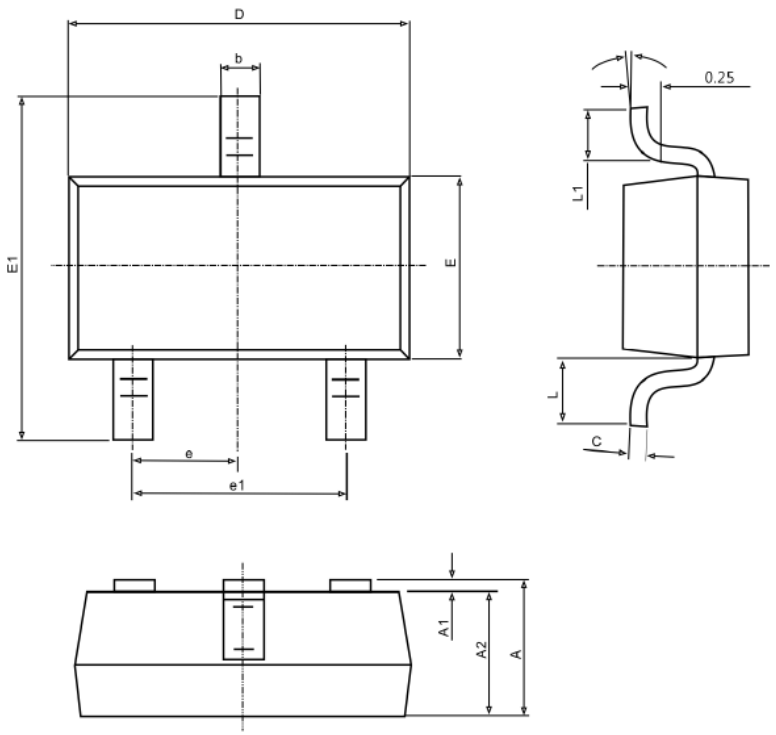


11. Thermal Transient Impedance



PACKAGE INFORMATION

Dimension in SOT-23 Package (Unit: mm)



SYMBOL	MIN	MAX
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.300	0.500
c	0.100	0.200
D	2.820	3.020
E	1.500	1.700
E1	2.650	2.950
e	0.950(BSC)	
e1	1.800	2.000
L	0.300	0.600
θ	0°	8°

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