DESCRIPTION

V_{DS}=-30V

V_{GS}=±12V

ID(A)=-6.6A

$R_{DS(ON)}$=45mΩ(Typ.)@V_{GS}=-10V

$R_{DS(ON)}$=52mΩ(Typ.)@V_{GS}=-4.5V

$R_{DS(ON)}$=68mΩ(Typ.)@V_{GS}=-2.5V

The AM3095 is available in SOT89-3 package

FEATURES

- Fast switch
- Low gate charge
- High power and current handling capability
- Available in SOT89-3 package

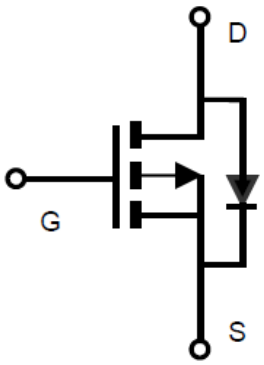
ORDERING INFORMATION

Package Type	Part Number	
SOT89-3 SPQ: 1,000pcs/Reel	K3	AM3095K3R
		AM3095K3VR
Note	V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products		

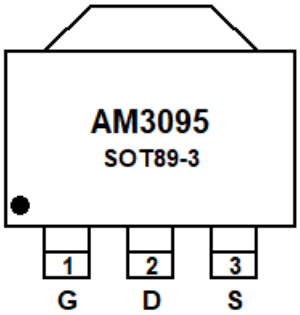
APPLICATIONS

- Portable Equipment
- Power Management
- Load Switch

P CHANNEL MOSFET



PIN DESCRIPTION



Top View

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

ABSOLUTE MAXIMUM RATINGS

T_A=25°C, unless otherwise noted

V_{DSS}, Drain-Source Voltage		-30V
V_{GSS}, Gate-Source Voltage		±12V
I_D, Continuous Drain Current	T_A=25°C	-6.6A
	T_A=70°C	-5.3A
I_{DM}, Pulsed Drain Current[NOTE2]		-26.4A
P_D, Power Dissipation[NOTE1]	T_A=25°C	3.6W
	T_A=70°C	2.3W
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	Max	Unit
Thermal Resistance Junction to Ambient[NOTE1]	t≦10s	$R_{\theta JA}$	35	°C/W
Thermal Resistance Junction to Ambient[NOTE1,3]	Steady-State		70	

ELECTRICAL CHARACTERISTICS

T_A=25℃, unless otherwise noted

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Parameters						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V, I_D=-250μA	-30	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250μA	-0.5	-0.7	-1	V
Gate Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±12V	-	-	±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-30V, V_{GS}=0V, T_J=25℃	-	-	-1	μA
		V_{DS}=-24V, V_{GS}=0V, T_J=75℃	-	-	-10	
Drain-source On-Resistance[NOTE4]	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-6.6A	-	45	54	mΩ
		V_{GS}=-4.5V, I_D=-4A	-	52	62	
		V_{GS}=-2.5V, I_D=-3A	-	68	85	
Forward Transconductance	Gfs	V_{DS}=-10V, I_D=-5A	-	6	-	S
Diode Characteristics						
Diode Forward Voltage[NOTE4]	V_{SD}	I_S=-1A, V_{GS}=0V	-	-	-1	V
Diode Continuous Forward Current	I_S		-	-	-3.3	A
Dynamic and Switching Parameters[NOTE5]						
Total Gate Charge	Q_g	V_{DS}=-15V, V_{GS}=10V, I_D=-5A	-	17.4	24.4	nC
Total Gate Charge (4.5V)	Q_g		-	8.5	11.5	
Gate-Source Charge	Q_{gs}		-	2.1	2.8	
Gate-Drain Charge	Q_{gd}		-	1.5	2.1	
Input Capacitance	C_{iss}	V_{DS}=-15V, V_{GS}=0V, f=1MHz	-	805	-	pF
Output Capacitance	C_{oss}		-	78	-	
Reverse Transfer Capacitance	C_{rss}		-	48	-	
Turn-On Time	$t_{d(on)}$	V_{DD}=-15V, V_{GEN}=-10V, R_G=6Ω, I_D=-1A	-	5.6	11	ns
	t_r		-	21	40	
Turn-Off Time	$t_{d(off)}$		-	43.9	83	
	t_f		-	10.8	21	

NOTE1: Surface mounted on FR4 board using 1 in^2 pad size.

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

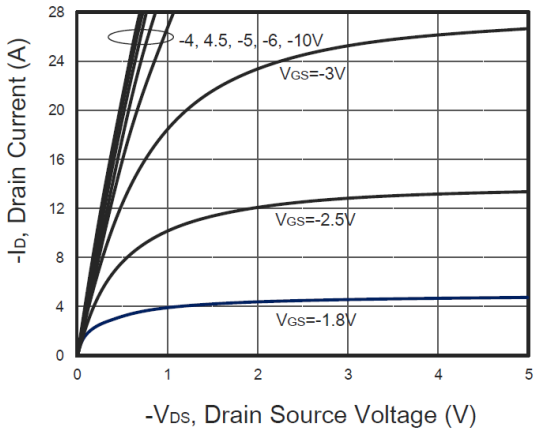
NOTE3: Using ≤ 10s junction-to-ambient thermal resistance is base on $T_{J(MAX)}$=150°C.

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

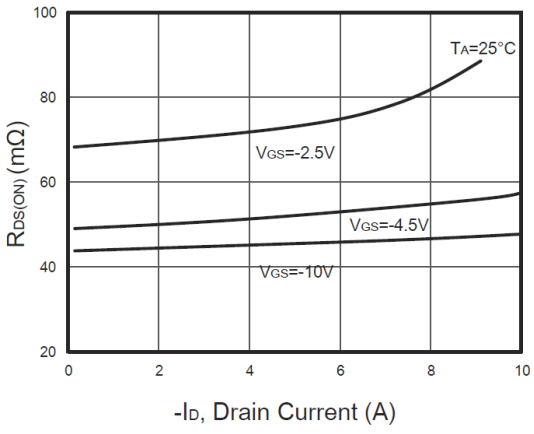
NOTE5: Guaranteed by design, not subject to production testing.

TYPICAL CHARACTERISTICS

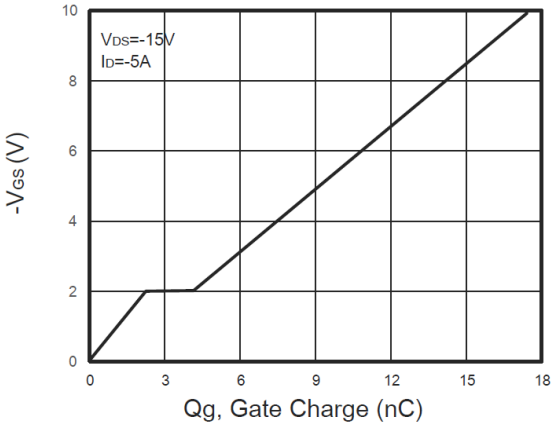
1. Output Characteristics



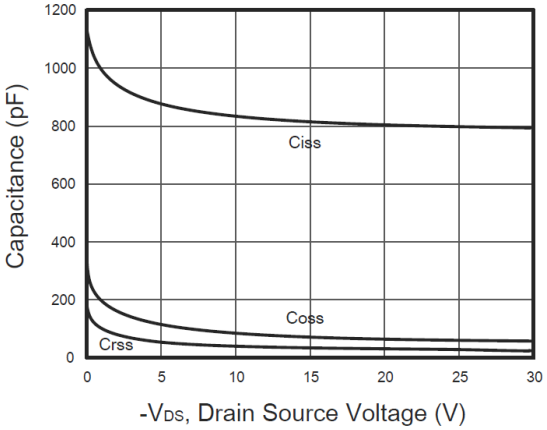
2. Drain-Source On Resistance



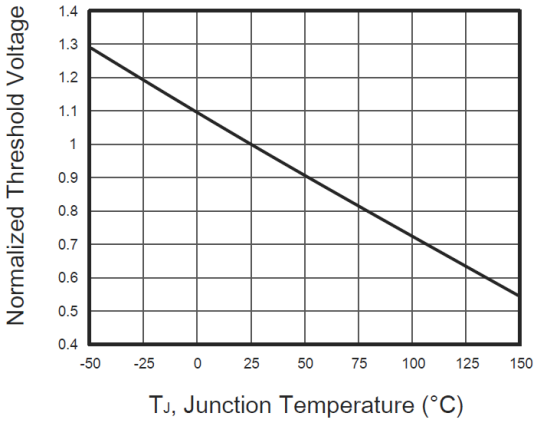
3. Gate Charge



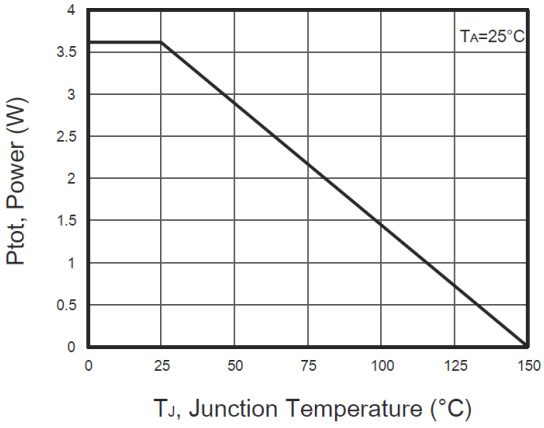
4. Capacitance



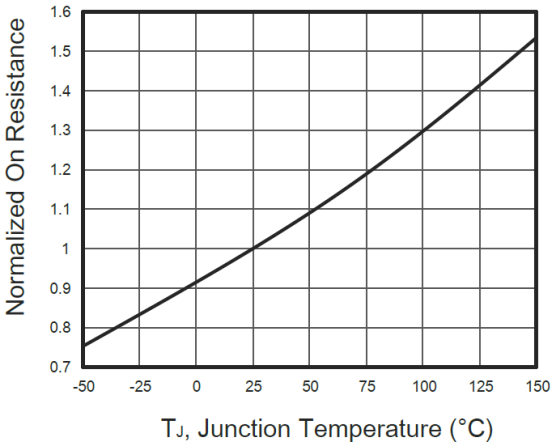
5. Gate Threshold Voltage



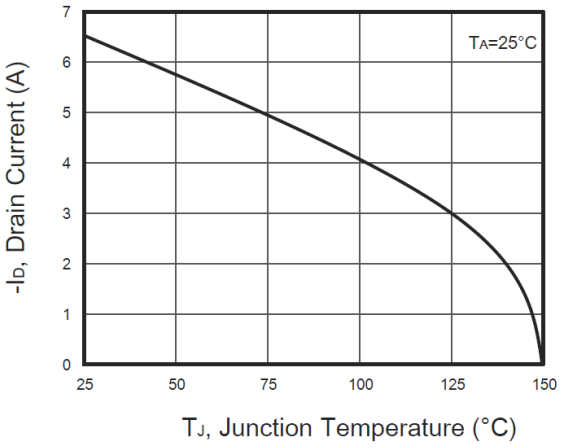
6. Power Dissipation



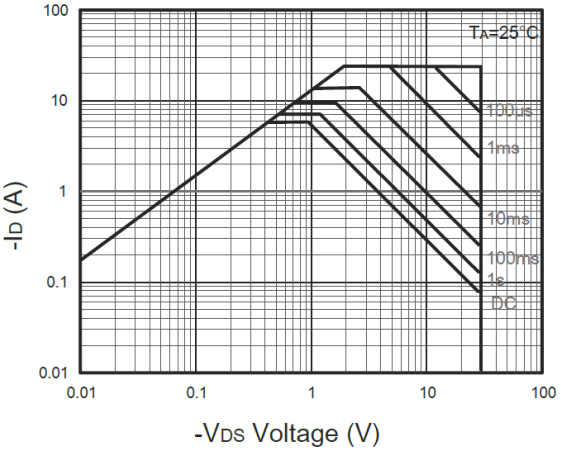
7. $R_{DS(ON)}$ vs. Junction Temperature



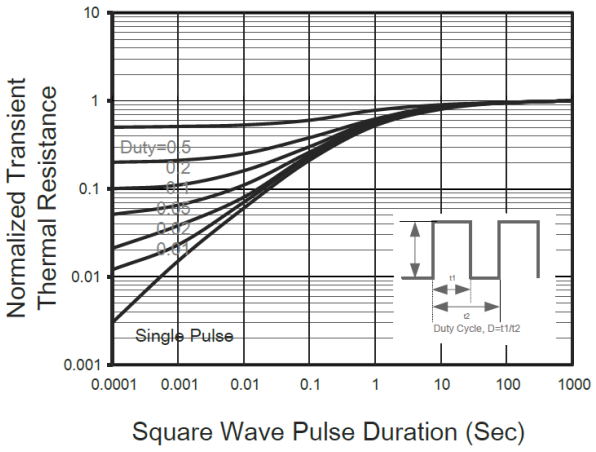
8. Drain Current vs T_J



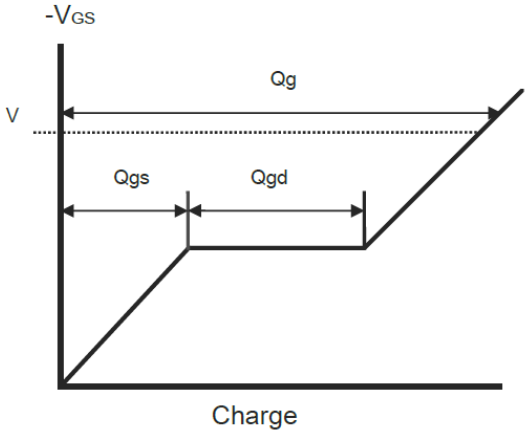
9. Maximum Safe Operation Area



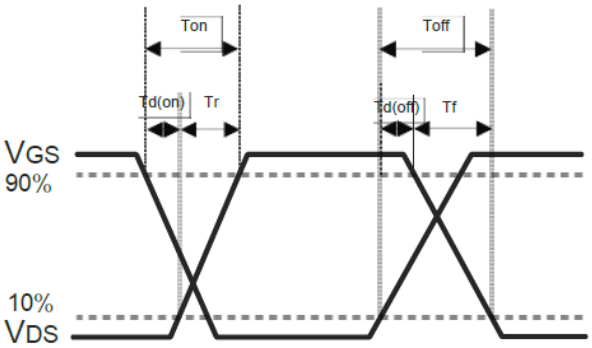
10. Thermal Transient Impedance



11. Gate Charge Waveform

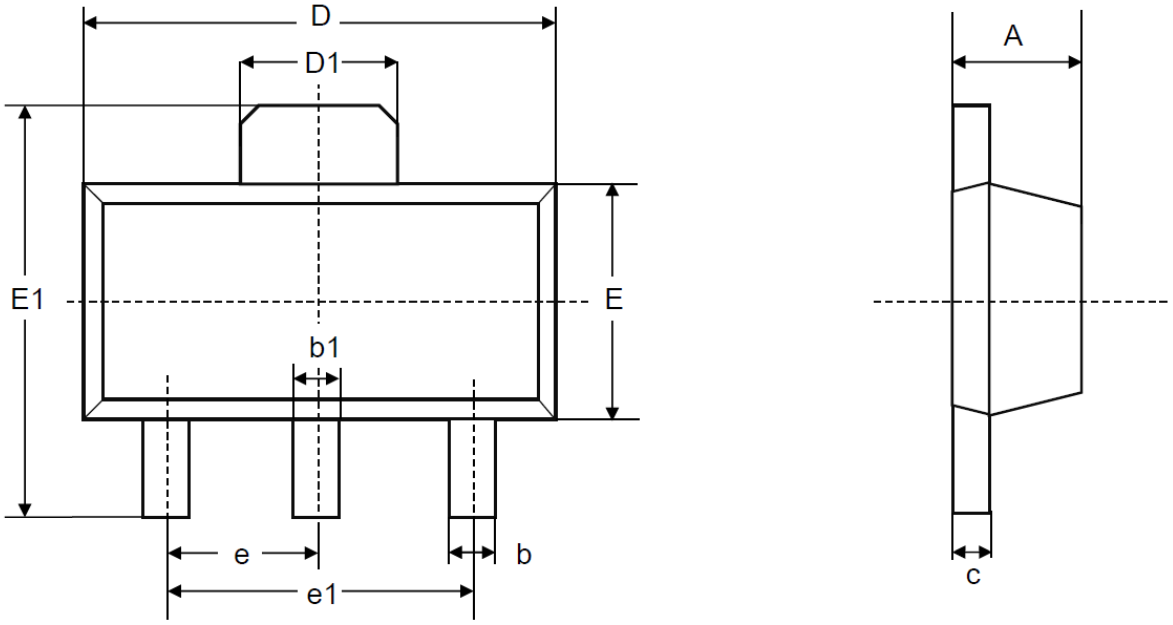


12. Switching Time Waveform



PACKAGE INFORMATION

Dimension in SOT89 (Unit: mm)



Symbol	Inches		Millimeters	
	Min	Max	Min	Max
A	1.440	1.540	0.567	0.606
b	0.350	0.450	0.138	0.177
b1	0.450	0.550	0.177	0.217
c	0.350	0.450	0.138	0.177
D	4.450	4.550	1.752	0.791
D1	1.650	1.750	0.650	0.689
E	2.450	2.550	0.965	1.004
E1	3.950	4.250	1.555	1.673
e	1.450	1.550	0.571	0.610
e1	2.900	3.100	1.142	1.220

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