



DESCRIPTION

$V_{DS} = -30V$

$V_{GS} = \pm 12V$

$I_D(A) = -6.6A$

$R_{DS(ON)} = 45m\Omega(Typ.)@V_{GS} = -10V$

$R_{DS(ON)} = 52m\Omega(Typ.)@V_{GS} = -4.5V$

$R_{DS(ON)} = 68m\Omega(Typ.)@V_{GS} = -2.5V$

The AM3095 is 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			

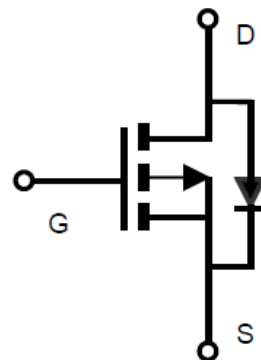
FEATURES

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

APPLICATIONS

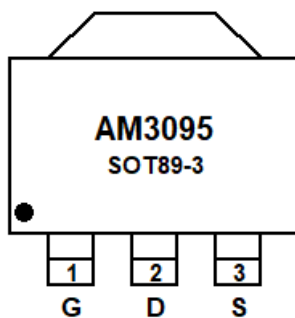
- Portable Equipment
- Power Management
- Load Switch

P CHANNEL MOSFET





PIN DESCRIPTION



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 _{θJA}	35	°C/W
Thermal Resistance Junction to Ambient ^{NOTE1,3}	Steady-State		70	



ELECTRICAL CHARACTERISTICS

T_A=25°C, 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°C	-	-	-1	μA
		V _{DS} =-24V, V _{GS} =0V, T _J =75°C	-	-	-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	G _{fs}	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 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.

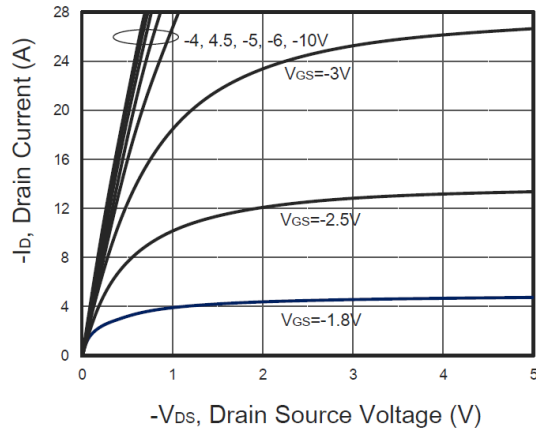
NOTE4: Pulse test width ≤300μs and duty cycle ≤ 2%.

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

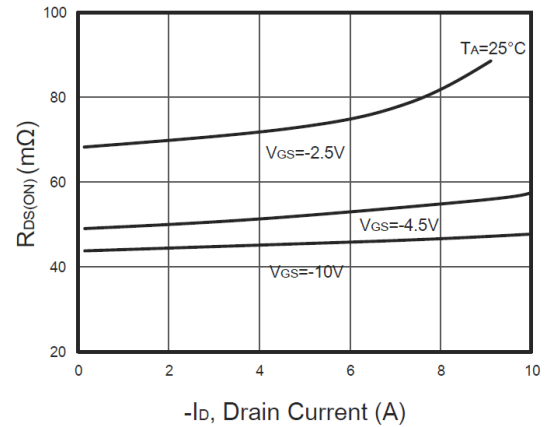


TYPICAL CHARACTERISTICS

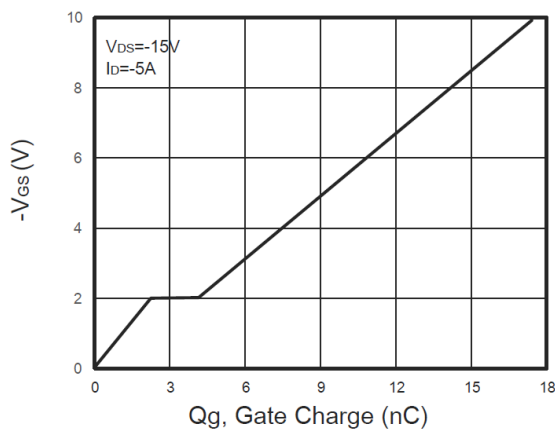
1. Output Characteristics



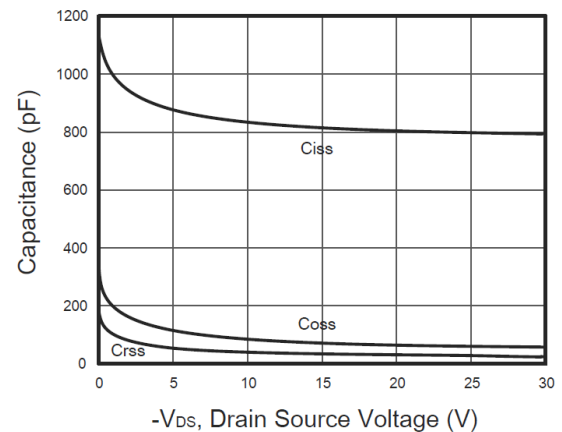
2. Drain-Source On Resistance



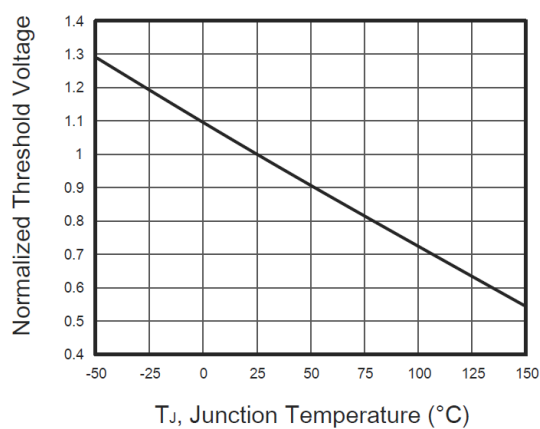
3. Gate Charge



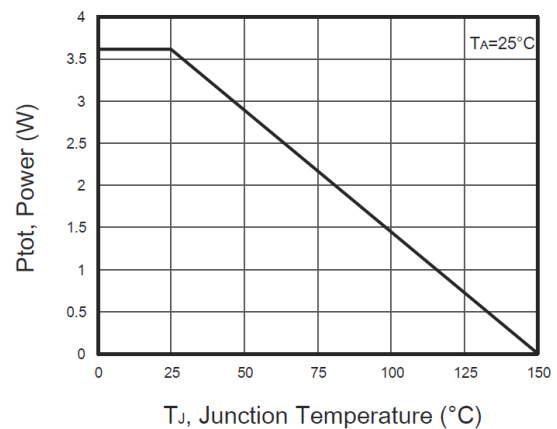
4. Capacitance



5. Gate Threshold Voltage

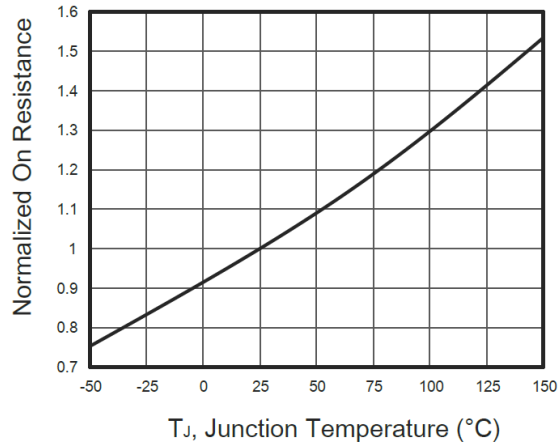


6. Power Dissipation

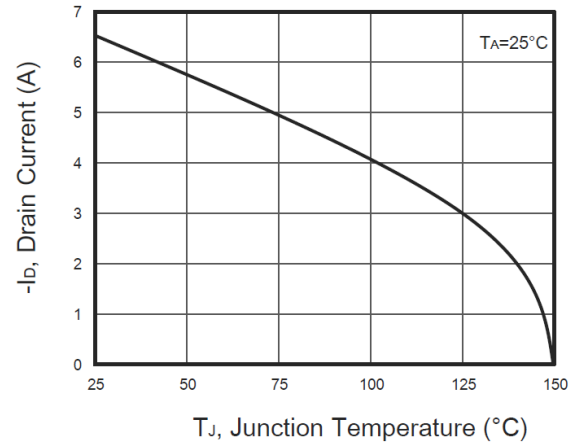




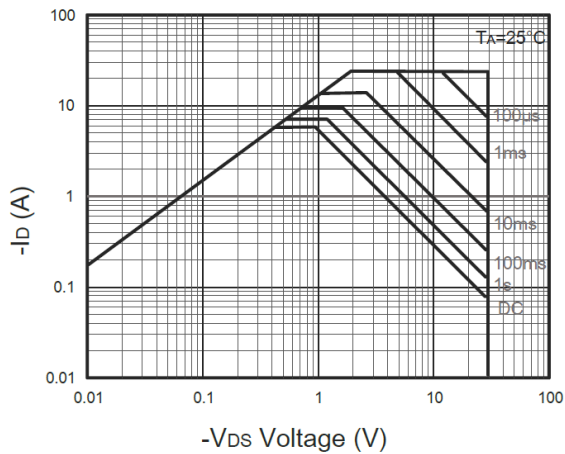
7. $R_{DS(ON)}$ vs. Junction Temperature



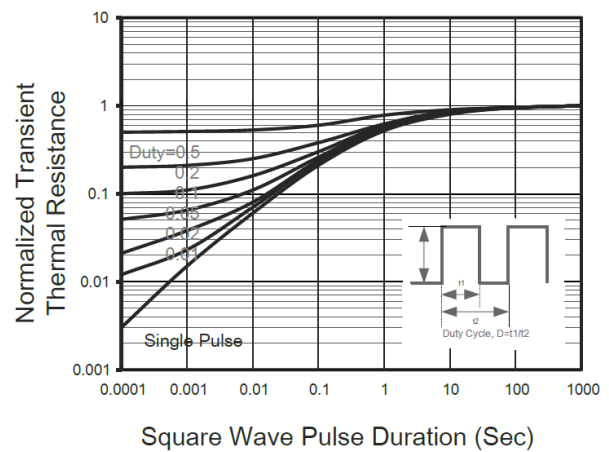
8. Drain Current vs T_J



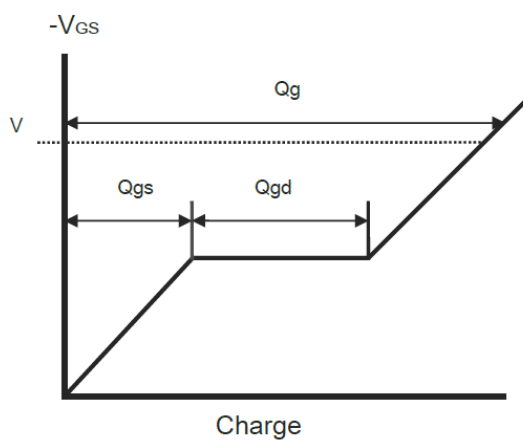
9. Maximum Safe Operation Area



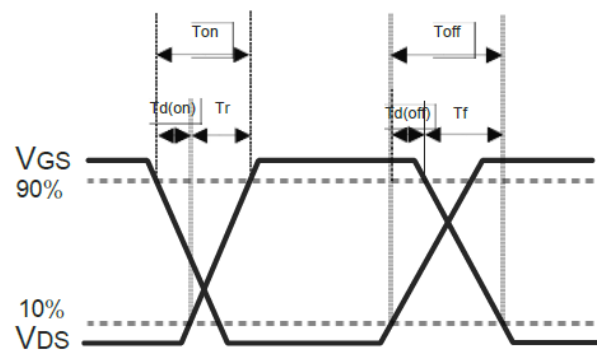
10. Thermal Transient Impedance



11. Gate Charge Waveform



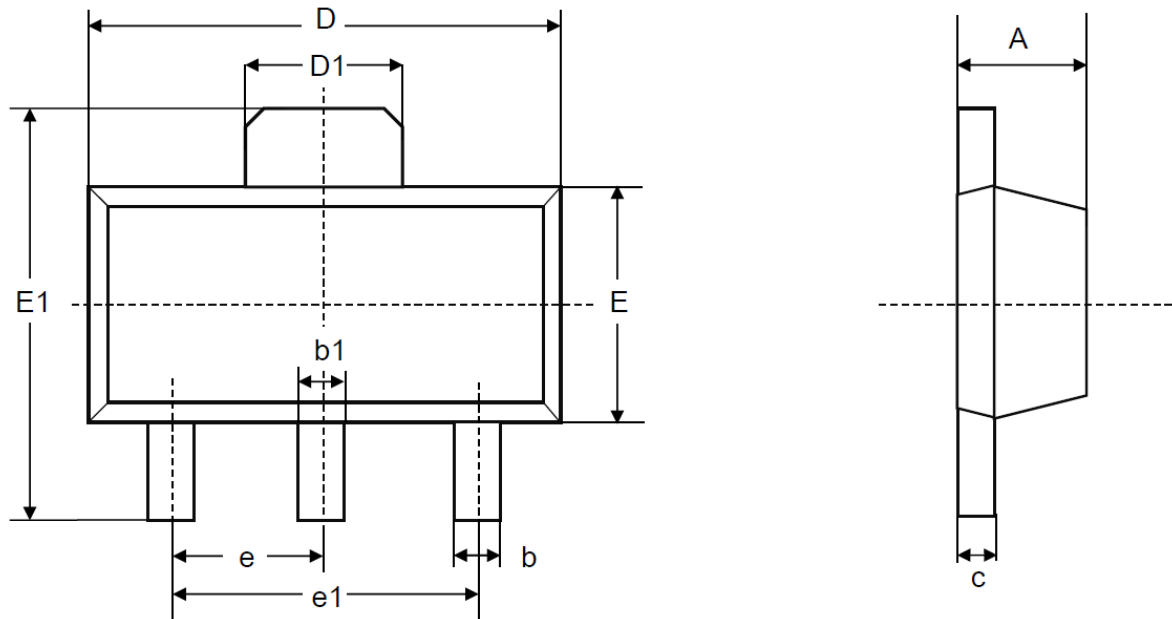
12. Switching Time Waveform





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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