



DESCRIPTION

The AM6217 is available in SOT-23 Package

$V_{DS} = -60V, I_D = -2A$

$R_{DS(ON)} = 158\ m\Omega(Typ.)@V_{GS}=-4.5V$

$R_{DS(ON)} = 200\ m\Omega(Typ.)@V_{GS}=-2.5V$

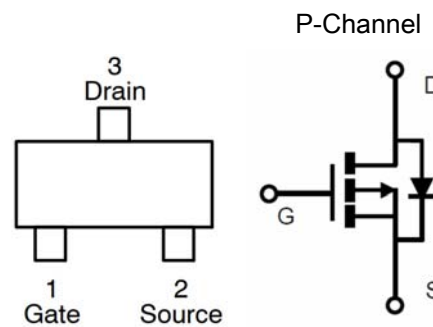
FEATURE

- Portable Devices
- Power Management
- Load Switch

ORDERING INFORMATION

Package Type	Part Number
SOT-23	AM6217
SPQ	3,00pcs/Reel
AiT provides all RoHS Compliant Products	

PIN DESCRIPTION



ABSOLUTE MAXIMUM RATINGS

$T_A = 25^\circ C$, unless otherwise specified.

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	-60	V
Gate-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current ⁽¹⁾	I_D	$T_A=25^\circ C$	-2
		$T_A=70^\circ C$	-1.6
Pulsed Drain Current ⁽²⁾	I_{DM}	-8	A
Power Dissipation ⁽¹⁾	P_D	$T_A=25^\circ C$	1.3
		$T_A=70^\circ C$	0.8
Operation Junction Temperature	T_J	-55/150	$^\circ C$
Storage Temperature Range	T_{STG}	-55/150	$^\circ C$
THERMAL RESISTANCE		Max	Unit
Thermal Resistance Junction to Ambient ^A $t \leq 10s$ ⁽³⁾	$R_{\theta JA}$	95	$^\circ C/W$
Thermal Resistance Junction to Ambient ^{AC} Steady-State		130	

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.

(1) Surface mounted on FR4 board using 1 in 2 pad size.

(2) Pulsed width limited by maximum junction temperature, $T_{J(MAX)}=150^\circ C$ (initial temperature $T_J=25^\circ C$).

(3) Using $\leq 10s$ junction-to-ambient thermal resistance based on $T_{J(MAX)}=150^\circ C$.



ELECTRICAL CHARACTERISTICS

T_A = 25°C, unless otherwise specified.

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Parameters						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =-250μA	-60			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =-250μA	-1.2	-1.9	-2.5	V
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -60V, V _{GS} = 0V T _J = 25°C			-1	μA
		V _{DS} = -48V, V _{GS} = 0V T _J = 75°C			-10	
Drain-source On-Resistance ⁽⁴⁾	R _{DS(ON)}	V _{GS} = -10, I _D = -2A		158	190	mΩ
		V _{GS} = -4.5, I _D = -1.5A		200	245	
Forward Transconductance	G _{fs}	V _{GS} = -10V, I _D = -2A		3.5		S
Diode Characteristics						
Diode Forward Voltage ⁽⁴⁾	V _{SD}	I _S = -1, V _{GS} = 0V			-1	V
Diode Continuous Forward Current	I _S				-2	A
Reverse Recovery Time	t _{rr}	I _S = -2A		22		ns
Reverse Recovery Charge	Q _{rr}	di/dt = 100A/μs		17		nC
Dynamic and Switching Parameters⁽⁵⁾						
Total Gate Charge	Q _g	V _{DS} = -30, V _{GS} = -10V I _D = -2A		7.9	11.9	nC
Total Gate Charge (-4.5V)	Q _g			3.7	5.2	
Gate-Source Charge	Q _{gs}			1.5	2.3	
Gate-Drain Charge	Q _{gd}			1.8	2.7	
Input Capacitance	C _{iss}	V _{DS} = -30V V _{GS} = 0V, f = 1MHz		395		pF
Output Capacitance	C _{oss}			35		
Reverse Transfer Capacitance	C _{rss}			20		
Turn – On Time	t _{d(on)}	V _{DD} = -30V		7.5		nS
	t _r	V _{GEN} = -10V		6		
Turn – Off Time	t _{d(off)}	R _G = 6Ω		22		
	t _f	I _D = -1A		10		

(4) Pulse test width ≤ 300μs and duty cycle ≤ 2%

(5) Guaranteed by design, not subject to production testing.



TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Output Characteristics

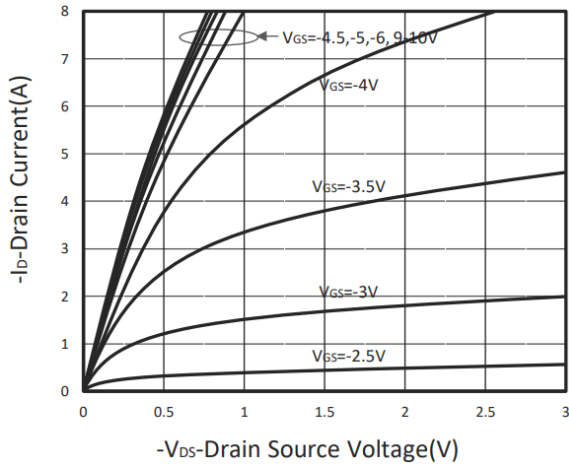


Fig 2. Drain-Source On Resistance

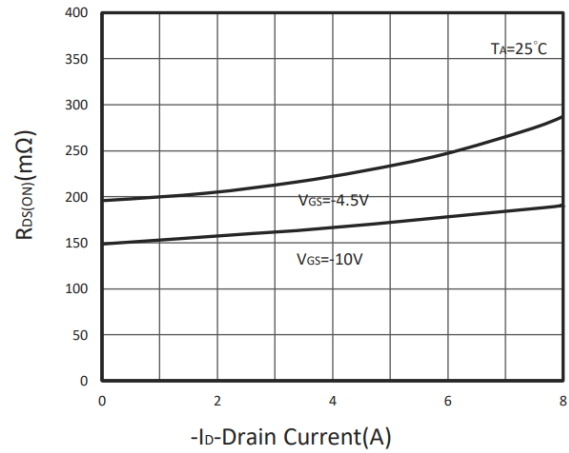


Fig 3. Gate Charge

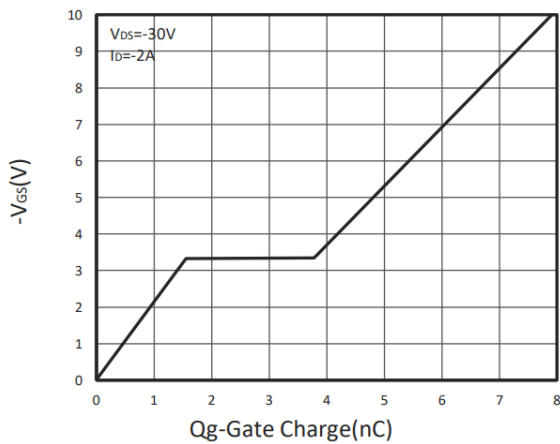


Fig 4. Capacitance

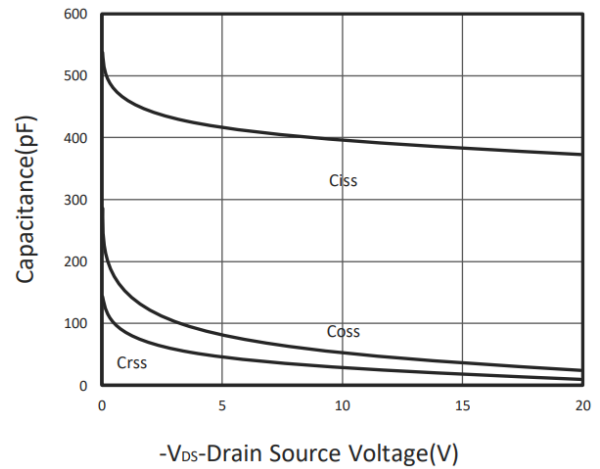


Fig 5. Gate Threshold Voltage

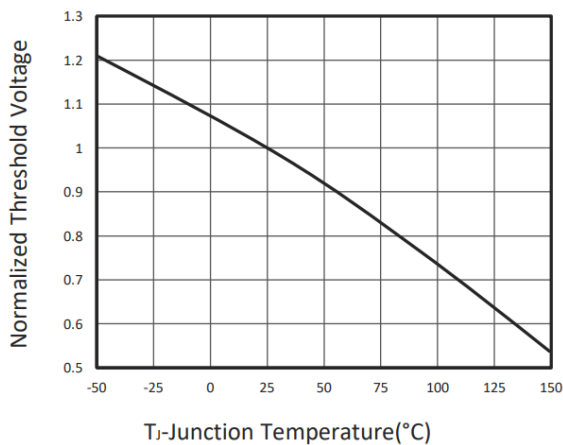


Fig 6. Power Dissipation

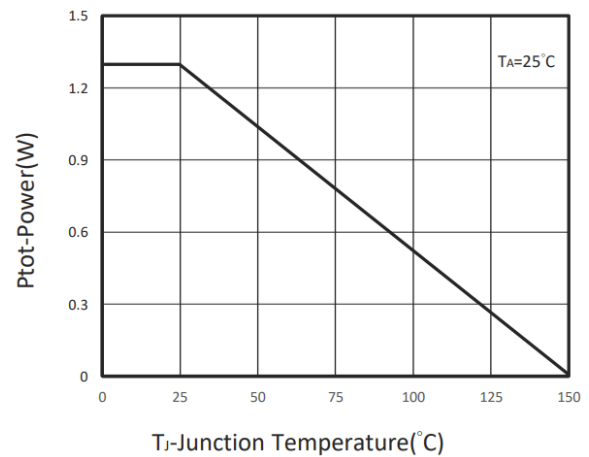




Fig 7. Gate Threshold Voltage

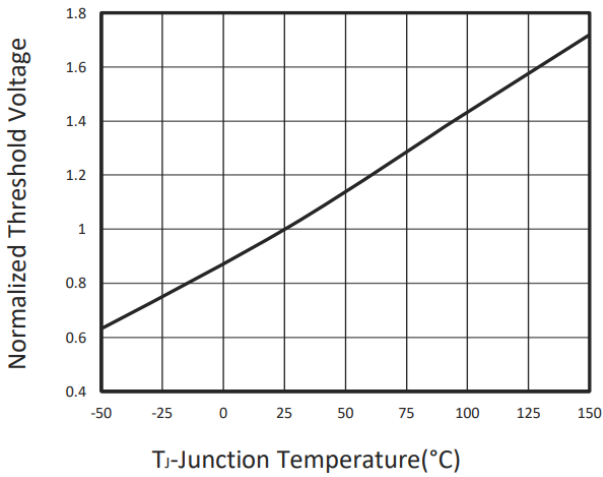


Fig 8. Drain Current vs T_J

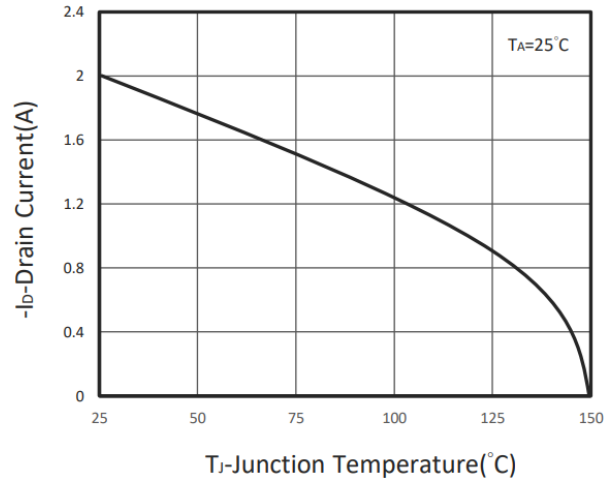


Fig 9. Maximum Safe Operation Area

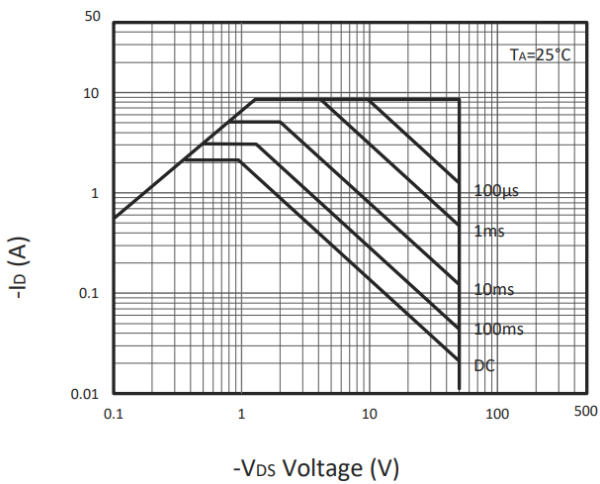


Fig 10. Thermal Transient Impedance

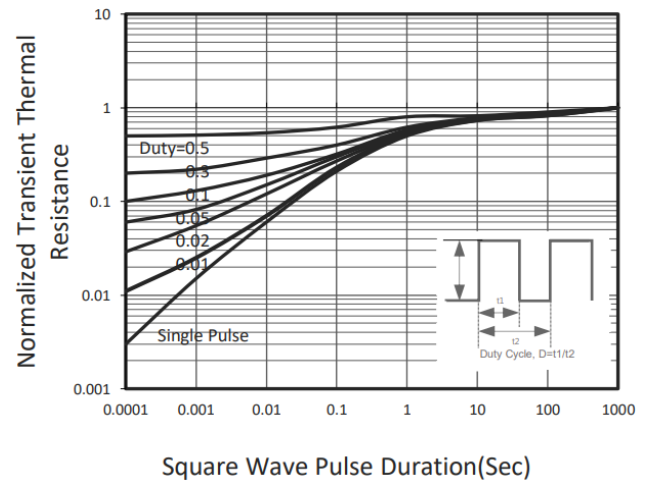


Fig 11. Gate Charge Waveform

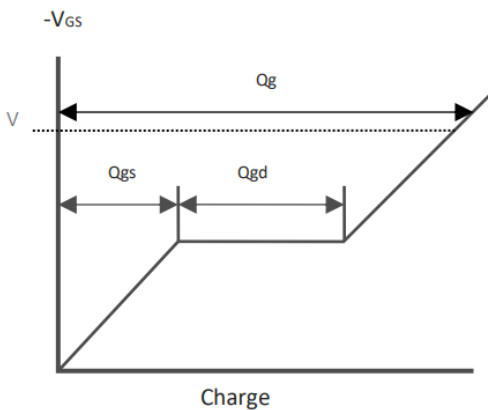
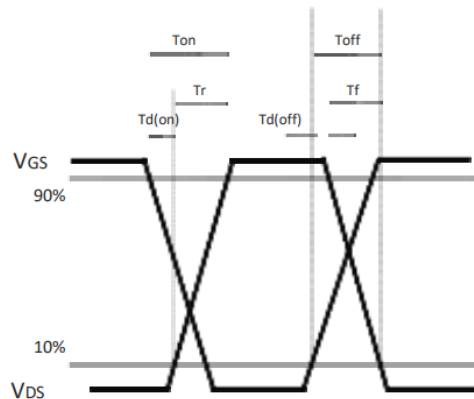


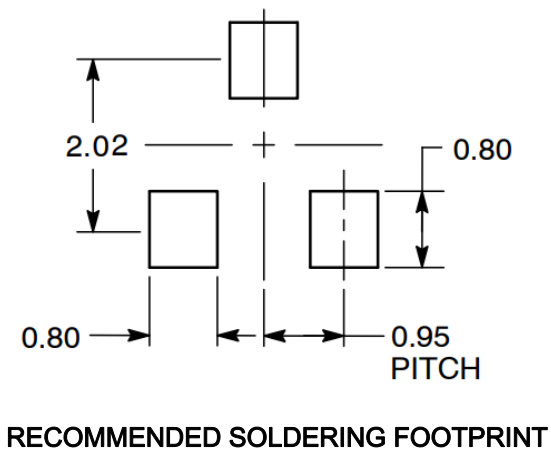
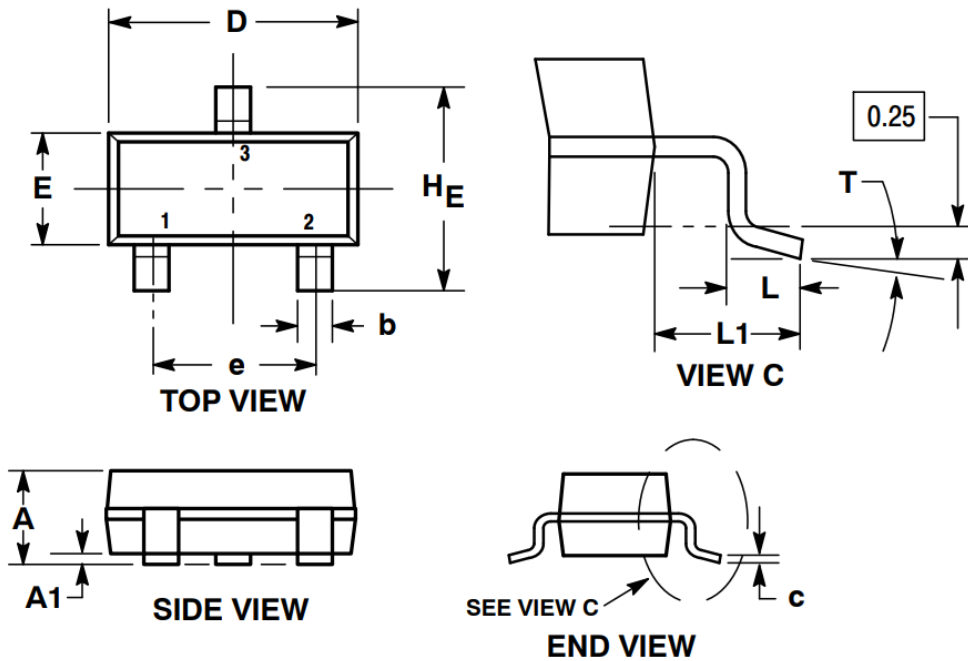
Fig 12. Switching Time Waveform





PACKAGE INFORMATION

Dimension in SOT-23 (Unit: mm)



RECOMMENDED SOLDERING FOOTPRINT

Symbol	Min	Max
A	0.90	1.15
A1	0.00	0.10
b	0.30	0.50
c	0.08	0.15
D	2.80	3.00
E	1.20	1.40
e	1.80	2.00
L	0.30	0.50
L1	0.55 REF	
HE	2.25	2.55
θ	0°	8°



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