



DESCRIPTION

$V_{DS} = -20V$

$V_{GS} = \pm 8V$

$I_D(A) = -5.3A$

$R_{DS(ON)} = 31m\Omega(Typ.) @ V_{GS} = -4.5V$

$R_{DS(ON)} = 40m\Omega(Typ.) @ V_{GS} = -2.5V$

$R_{DS(ON)} = 50m\Omega(Typ.) @ V_{GS} = -1.8V$

$R_{DS(ON)} = 60m\Omega(Typ.) @ V_{GS} = -1.5V$

The AM2317B is available in SOT-23 package.

ORDERING INFORMATION

Package Type	Part Number	
SOT-23 SPQ: 3,000pcs/Reel	E3	AM2317BE3R
		AM2317BE3VR
Note	V: Halogen free Package R: Tape & Reel	
AiT provides all RoHS products		

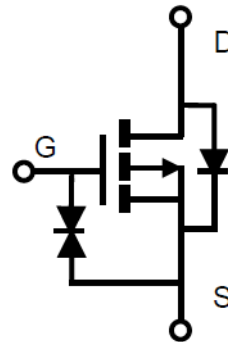
FEATURES

- Trech DMOS Technology
- 1.5V Low gate drive applications
- Available in SOT-23 package

APPLICATIONS

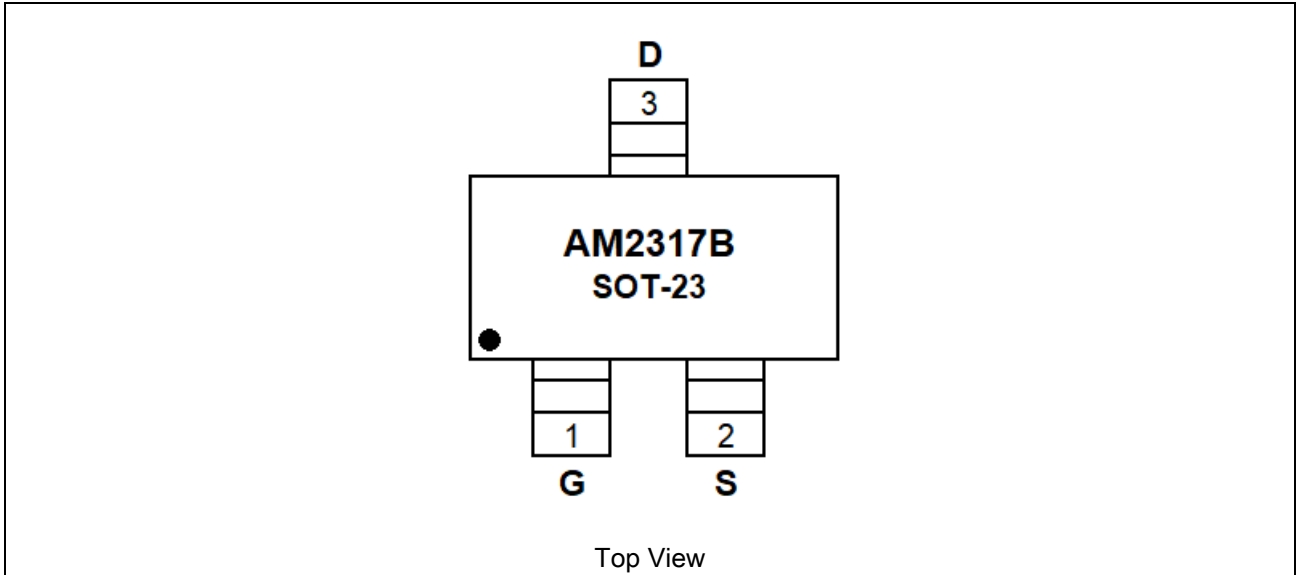
- Portable Equipment
- Power Management

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		-20V
V _{GSS} , Gate-Source Voltage		±8V
I _D , Continuous Drain Current	T _A = 25°C	-5.3A
	T _A = 70°C	-4.2A
I _{DM} , Pulsed Drain Current ^{NOTE1}		-21.2A
P _D , Power Dissipation ^{NOTE2}	T _A = 25°C	1.6W
	T _A = 70°C	1W
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.

THERMAL RESISTANCE

Parameter		Symbol	Min	Typ	Max	Units
Thermal Resistance Junction to Ambient ^{NOTE2}	t ≤ 10s	R _{θJA}	-	-	80	°C/W
Thermal Resistance Junction to Ambient ^{NOTE2,3}	Steady-State		-	-	120	



ELECTRICAL CHARACTERISTICS

T_A = 25°C, unless otherwise noted

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameters						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _{DS} =-250μA	-20	-	-	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _{DS} =-250μA	-0.3	-0.5	-1	V
Gate Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±8V	-	-	±10	μA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V, T _J =25°C	-	-	-1	μA
		V _{DS} =-16V, V _{GS} =0V, T _J =75°C	-	-	-10	
Drain-Source On-Resistance ^{NOTE4}	R _{DS(ON)}	V _{GS} =-4.5V, I _{DS} =-4.5A	-	31	35	mΩ
		V _{GS} =-2.5V, I _{DS} =-4A	-	40	45	
		V _{GS} =-1.8V, I _{DS} =-2A	-	50	57	
		V _{GS} =-1.5V, I _{DS} =-1.2A	-	60	70	
Forward Transconductance	G _{fs}	V _{DS} =-10V, I _D =-4.5A	-	11	-	S
Diode Characteristics						
Diode Forward Voltage ^{NOTE4}	V _{SD}	I _S =-1A, V _{GS} =0V	-	-0.7	-1	V
Continuous Source Current	I _S		-	-	-2.7	A
Dynamic and Switching Parameters						
Total Gate Charge	Q _g	V _{DS} =-10V, V _{GS} =-4.5V, I _{DS} =-4.5A	-	9.3	13	nC
Gate-Source Charge	Q _{gs}		-	1.5	2.1	
Gate-Drain Charge	Q _{gd}		-	2.5	3.5	
Input Capacitance	C _{iss}	V _{DS} =-10V, V _{GS} =0V, f=1MHz	-	825	1155	pF
Output Capacitance	C _{oss}		-	120	168	
Reverse Transfer Capacitance	C _{rss}		-	82	115	
Turn-On Time ^{NOTE4}	t _{d(on)}	V _{DD} =-10V, V _{GEN} =-4.5V, R _G =3.3Ω, I _D =-1A	-	10.2	-	ns
	t _r		-	18	-	
Turn-Off Time ^{NOTE4}	t _{d(off)}		-	46	-	
	t _f		-	14	-	

NOTE1: Pulsed width limited by maximum junction temperature, T_{J(MAX)}=150°C.

NOTE2: The value of R_{θJA} is measured with the device mounted on 1in² FR-4 board in a still air environment with maximum junction temperature T_{J(MAX)}=150°C (initial temperature T_A=25°C).

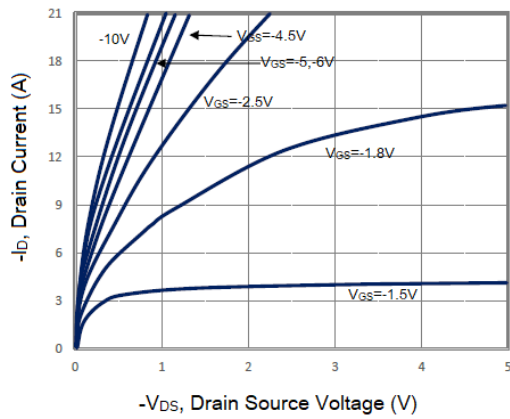
NOTE3: T_{J(MAX)}=150°C, using junction-to-case thermal resistance (R_{θJC}) is more useful in additional heat sinking is used.

NOTE4: The data tested by pulsed, pulse width ≤ 300μs, duty cycle ≤ 2%.

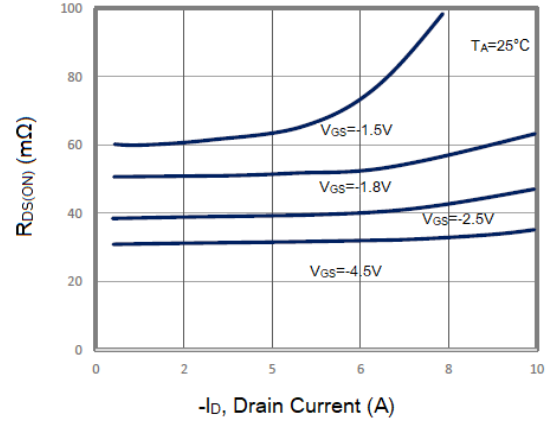


TYPICAL ELECTRICAL CHARACTERISTICS

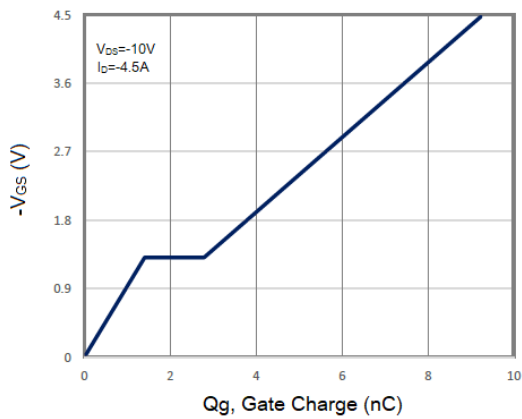
1. Output Characteristics



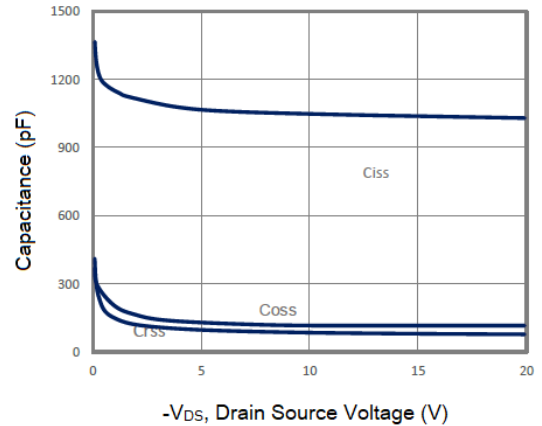
2. Drain-Source On Resistance



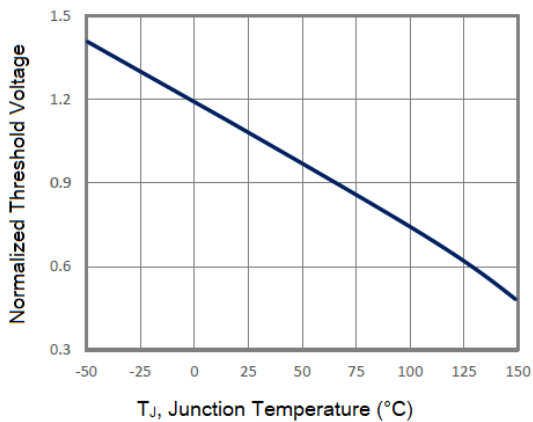
3. Gate Charge



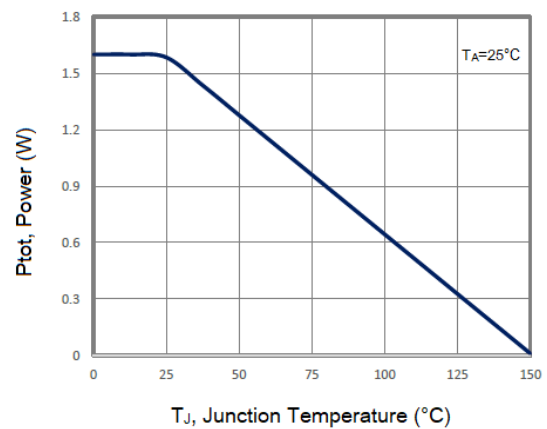
4. Capacitance



5. Gate Threshold Voltage

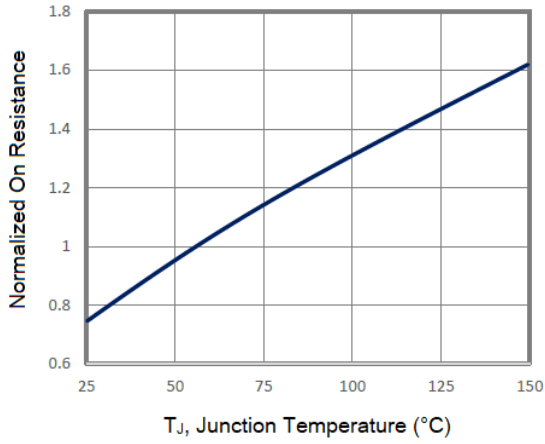


6. Power Dissipation

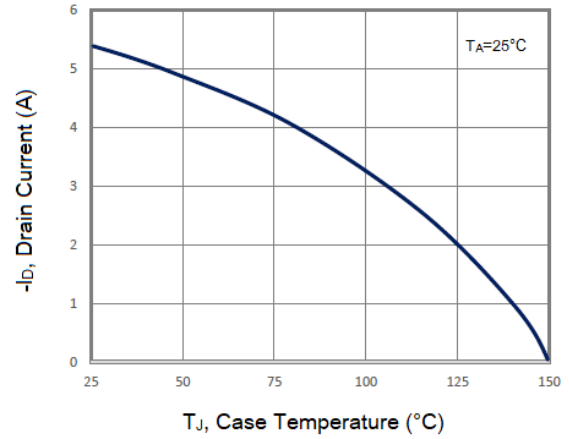




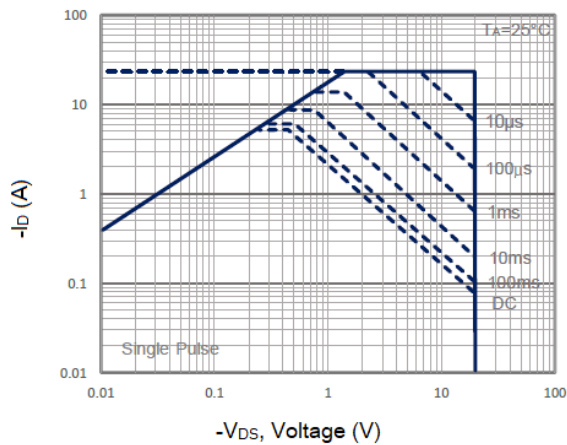
7. $R_{DS(ON)}$ vs. Junction Temperature



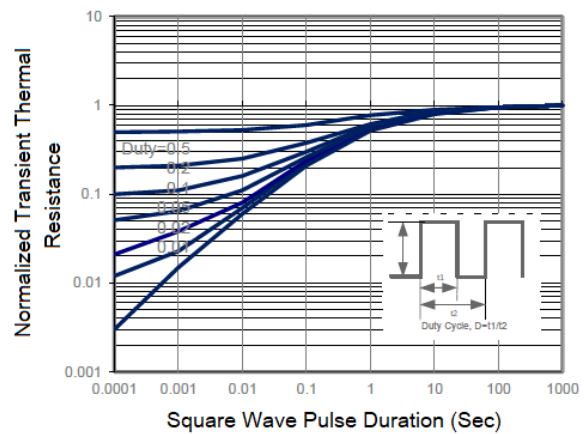
8. Drain Current vs. T_J



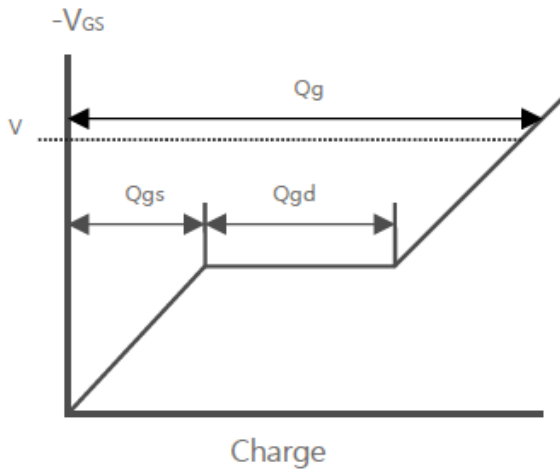
9. Maximum Safe Operation Area



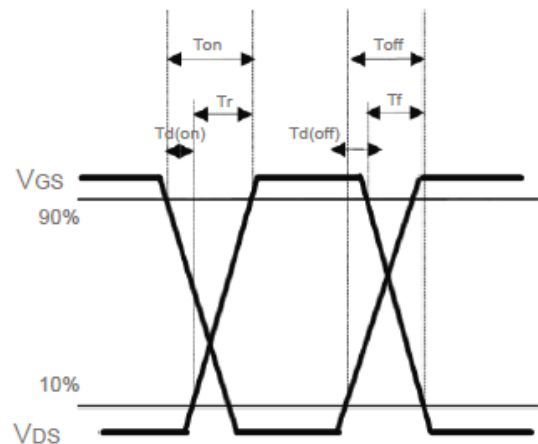
10. Thermal Transient Impedance



11. Gate Charge Waveform



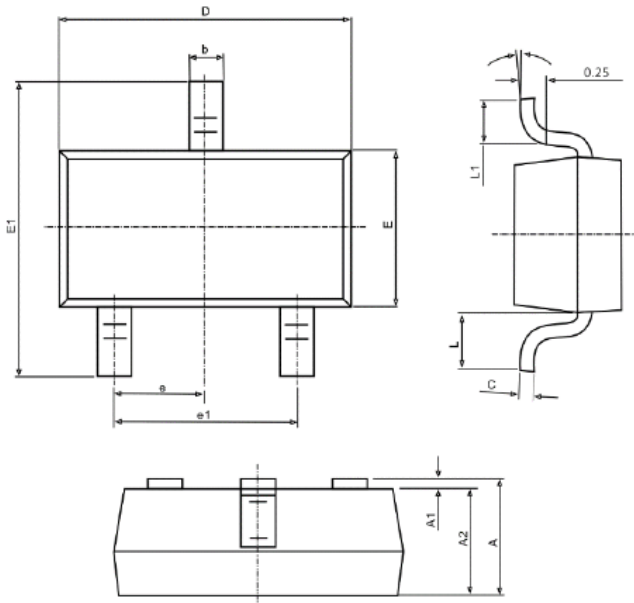
12. Switching Time Waveform



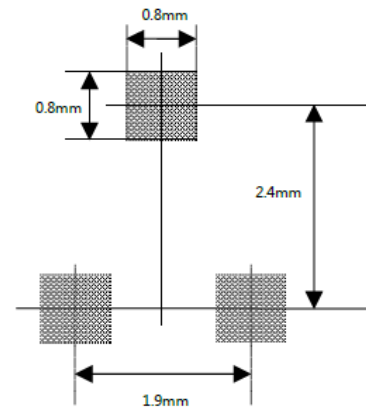


PACKAGE INFORMATION

Dimension in 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	0.550	0.010	0.022
L	0.550	0.650	0.021	0.039
θ	0°	8°	0°	8°



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