

**DESCRIPTION**

The AM80PS15LS is available in TO-263 package

BVDSS	RDSON	ID
-150V	80mΩ	-35A

FEATURE

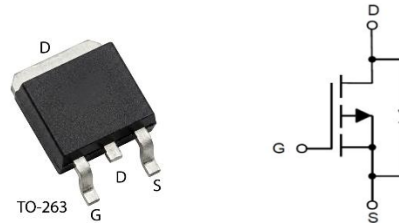
- Fast Switching
- $R_{DS(ON)}$, Typ= 80mΩ @ $V_{GS}=-10V$
- Low Gate Charge and Rdson
- Advanced Split Gate Trench Technology
- 100%Single Pulse avalanche energy Test

APPLICATION

- Power switching application
- DC-DC Converter
- Power Management

ORDERING INFORMATION

Package Type	Part Number	
TO-263	S	AM80PS15LS
Note	SPQ: 800pcs/Reel	
AiT provides all RoHS products		

PIN DESCRIPTION

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

ABSOLUTE MAXIMUM RATING

$T_C = 25^{\circ}C$, unless otherwise specified.

Parameter		Symbol	Value	Unit
Drain-to-Source Voltage		V_{DS}	-150	V
Gate-to-Source Voltage		V_{GS}	±20	V
Continuous Drain Current		I_D	-35	A
Continuous Drain Current	$T_C = 100^{\circ}C$		-23	A
Pulsed Drain Current		I_{DM}	-140	A
Single Pulse Avalanche Energy ⁽¹⁾		E_{AS}	400	mJ
Power Dissipation		P_D	155	W
Power Dissipation	$T_C = 100^{\circ}C$		62	
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	°C
Thermal Resistance Junction to Case		$R_{\theta JC}$	0.81	°C/W

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.



ELECTRICAL CHARACTERISTICS

T_C = 25°C, unless otherwise specified.

Parameter	Symbol	Conditions	Min	Typ.	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =-250μA	-150	-	-	V
Drain to Source Leakage Current	I _{DSS}	V _{DS} =-120V, V _{GS} =0V	-	-	-1	μA
Gate to Source Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V	-	-	±100	nA
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} = V _{GS} , I _D =-250μA	-1.3	-1.7	-2.3	V
Drain-to-Source On-Resistance	R _{DS(ON)}	V _{GS} =-10V, I _D =-30A	-	80	100	mΩ
		V _{GS} =-4.5V, I _D =-20A	-	80	105	mΩ
Gate Resistance	R _G	V _{DS} =-75, V _{GS} =0V, f=1MHz	-	7.9	-	Ω
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -75V f = 1MHz	-	3067	-	pF
Output Capacitance	C _{oss}		-	137	-	
Reverse Transfer Capacitance	C _{rss}		-	8	-	
Total Gate Charge	Q _g	I _D =-15A, V _{DS} =-75V V _{GS} =-10V	-	83	-	nC
Gate to Source Charge	Q _{gs}		-	8	-	
Gate to Drain Charge	Q _{gd}		-	18	-	
Gate Plateau Voltage	V _{plateau}		-	-3.2	-	V
Switching Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{GS} =-10V, V _{DD} =-75V, I _D =-15A, R _G =1.6Ω	-	68	-	ns
Rise Time	t _r		-	18	-	
Turn-Off Delay Time	t _{d(off)}		-	70	-	
Fall Time	t _f		-	35	-	
Drain-Source Body Diode Characteristics						
Maximum Pulsed Current (Body Diode)	I _{SM}		-	-	-35	A
Diode Forward Voltage	V _{SD}	I _S =-1A, V _{GS} =0V	-	-	-1.2	V
Reverse Recovery Time	T _{rr}	I _S =-15A, T _J = 25°C, di/dt=100A/us	-	350	-	nS
Reverse Recovery Charge	Q _{rr}		-	86	-	nC

Note:

1. The test condition is V_{DD}=-50V, V_{GS}=-10V, L=0.5mH, R_G=25Ω



TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Typical Output Characteristics

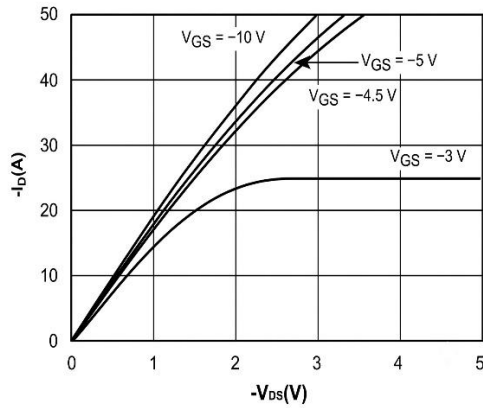


Fig 2. Typical Transfer Characteristics

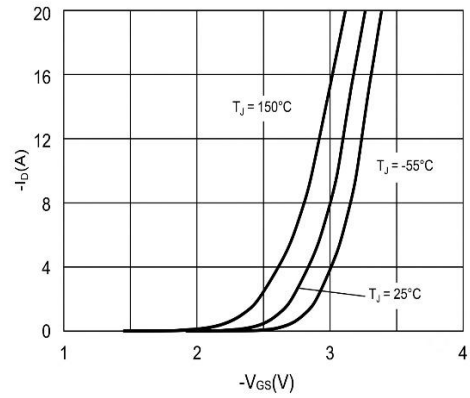


Fig 3. On-Resistance vs. Drain Current

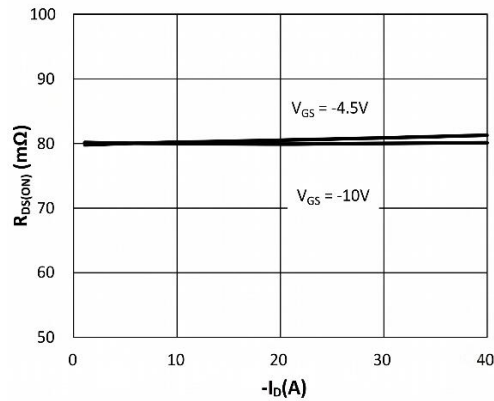


Fig 4. Body Diode Characteristics

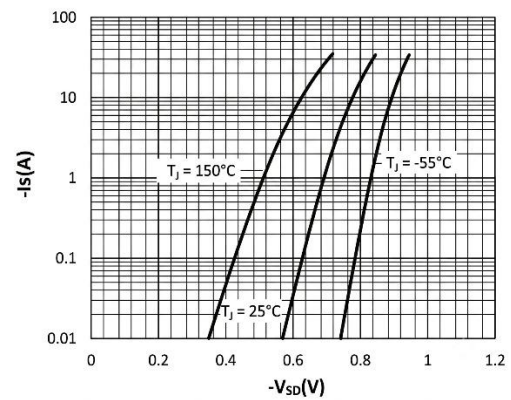


Fig 5. Gate Charge Characteristics

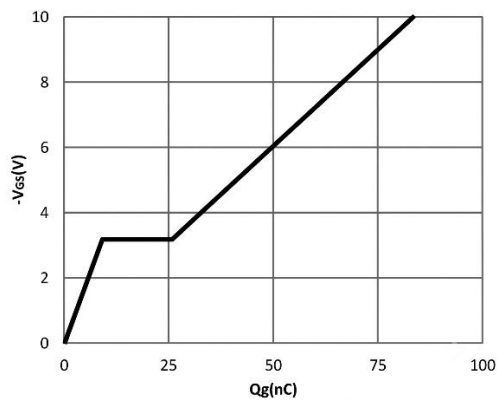


Fig 6. Capacitance Characteristics

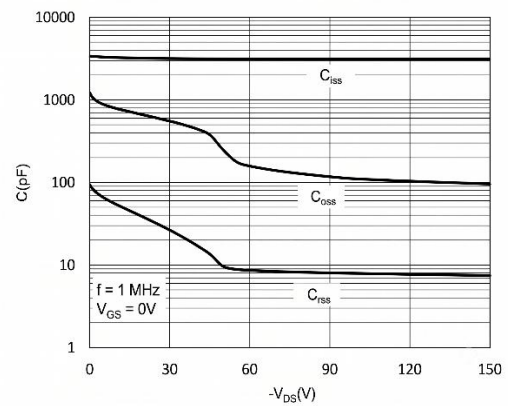




Fig 7. Normalized Breakdown voltage vs. Junction Temperature

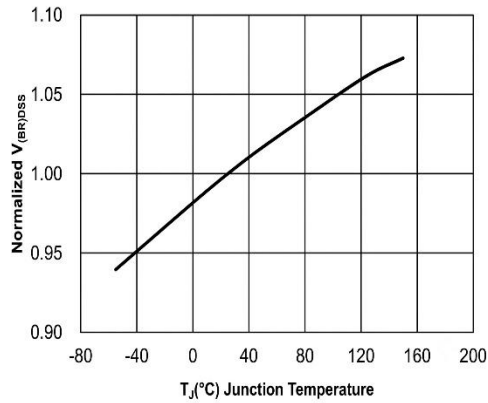


Fig 8. Normalized Threshold Voltage vs. Junction Temperature

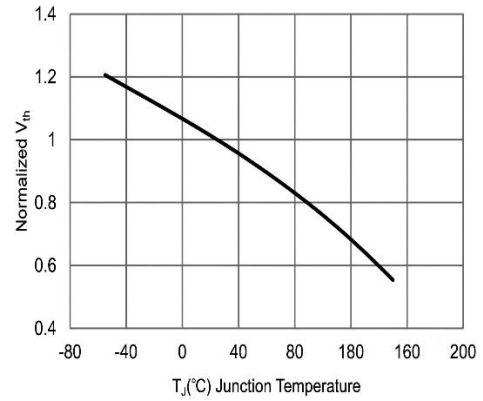


Fig 9. Current De-rating

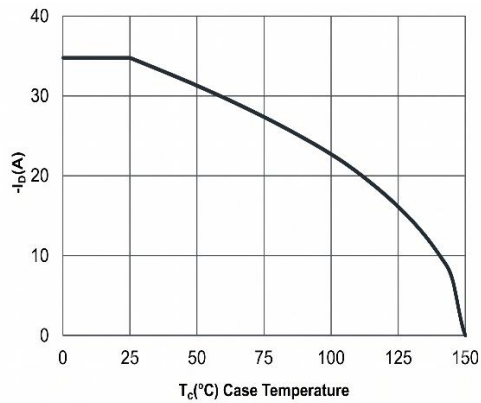


Fig 10. Maximum Safe Operating Area

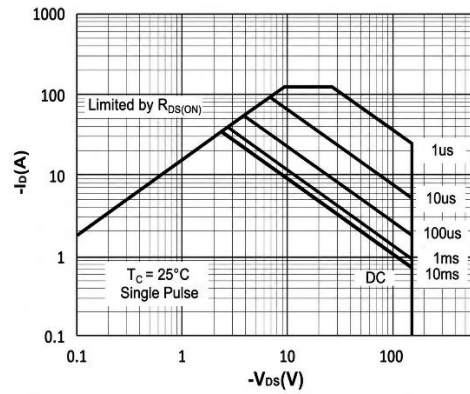
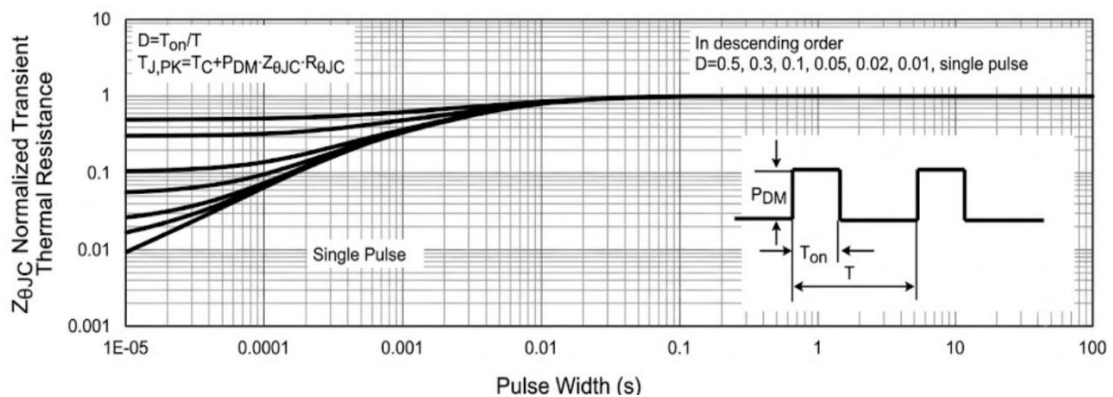


Fig 11. Normalized Maximum Transient Thermal Impedance





TEST CIRCUIT AND WAVEFORM

Fig 12. Gate Charge Test Circuit & Waveform

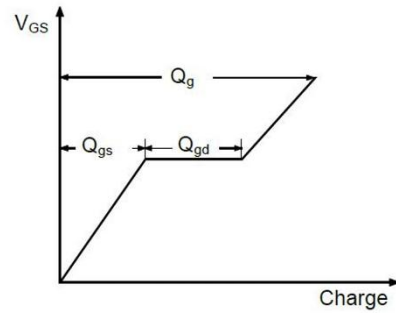
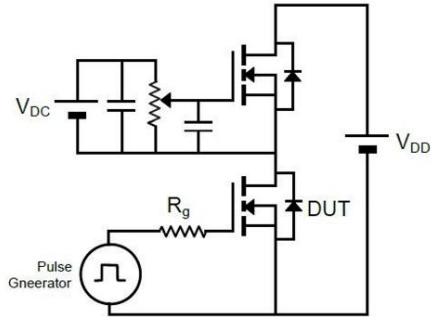


Fig 13. Resistive Switching Test Circuit & Waveform

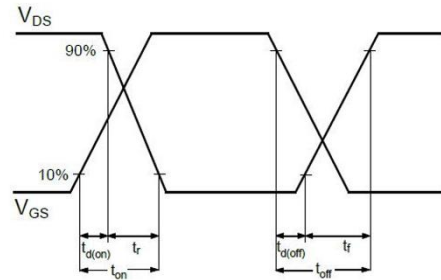
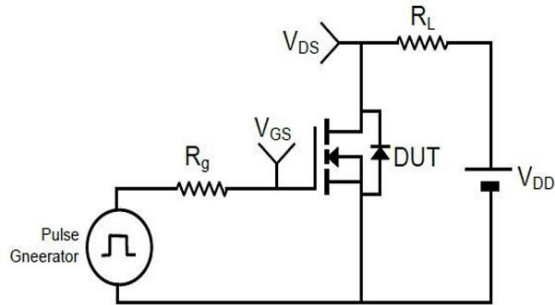


Fig 14. Un-clamped Inductive Load Switching Test Circuit & Waveform

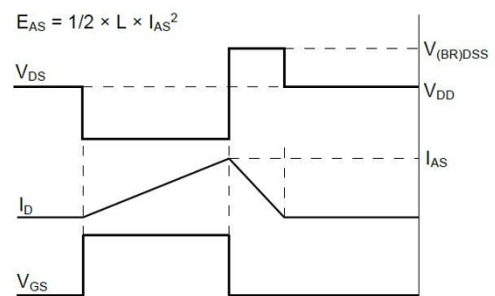
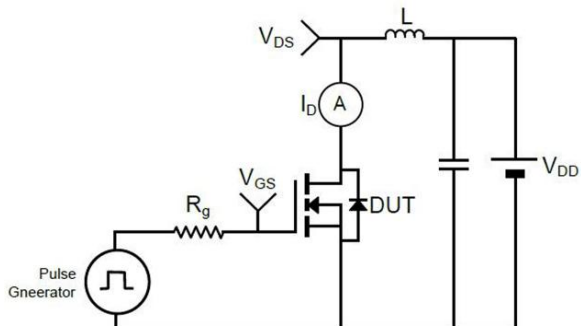
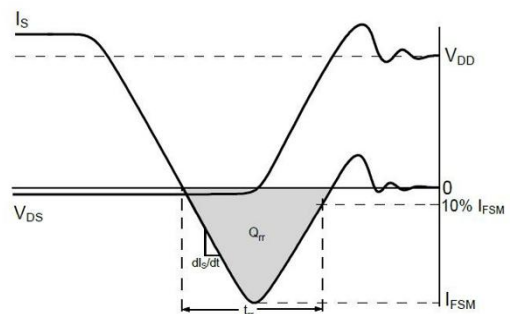
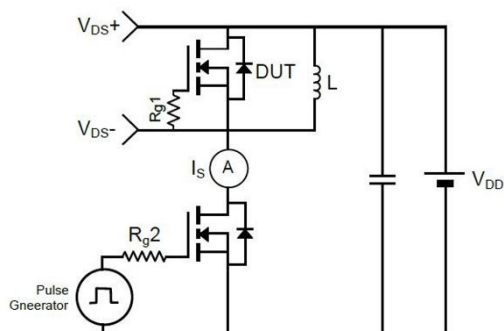


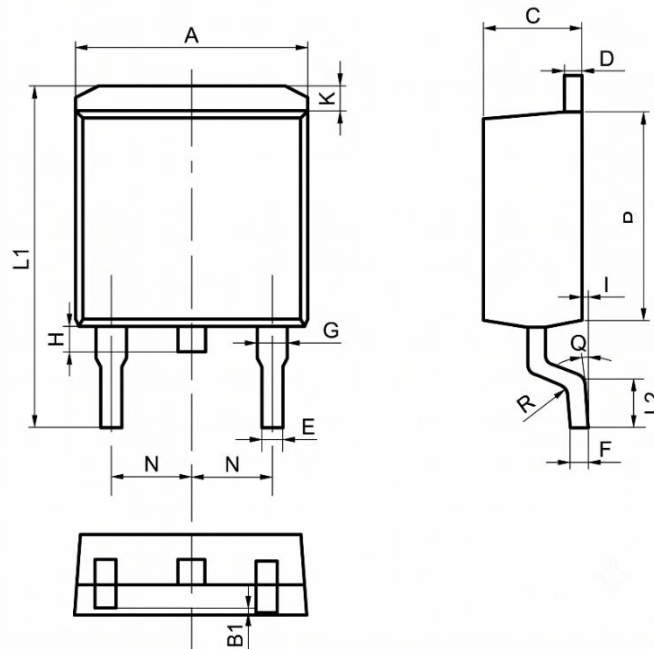
Fig 15. Diode Reverse Recovery Test Circuit & Waveforms





PACKAGE INFORMATION

Dimension in TO-252 (Unit: mm)



Symbol	Min.	Max.
A	9.800	10.400
B	8.900	9.500
B1	0.000	0.100
C	4.400	4.800
D	1.160	1.370
E	0.700	0.950
F	0.300	0.600
G	1.070	1.470
H	1.300	1.800
K	0.950	1.370
L1	14.500	16.500
L2	1.600	2.300
I	0.000	0.200
Q	0°	8°
R	0.4°	
N	2.390	2.690



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