



FEATURES

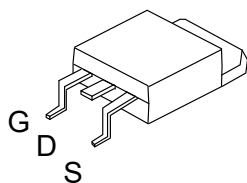
- Fast switching
- 100% avalanche tested
- Improved dv/dt capability

APPLICATIONS

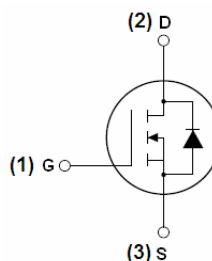
- Switch Mode Power Supply (SMPS)
- Uninterruptible Power Supply (UPS)
- Power Factor Correction (PFC)

Product Summary

V_{DS}	200	V
$R_{DS(on),Max}@V_{GS}=10V$	70	mΩ
I_D	30	A



TO-263



Absolute Maximum Ratings $T_C = 25^\circ\text{C}$, unless otherwise noted

Parameter	Symbo	Value	Unit
		TO-263	
Drain-Source Voltage ($V_{GS} = 0V$)	V_{DSS}	200	V
Continuous Drain Current	I_D	30	A
Pulsed Drain Current (note1)	I_{DM}	120	A
Gate-Source Voltage	V_{GSS}	± 20	V
Single Pulse Avalanche Energy (note2)	E_{AS}	605	mJ
Avalanche Current (note1)	I_{AS}	11	A
Repetitive Avalanche Energy (note1)	E_{AR}	363	mJ
Power Dissipation ($T_C = 25^\circ\text{C}$)	P_D	83	W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55~+150	$^\circ\text{C}$

Thermal Resistance

Parameter	Symbol	Value	Unit
		TO-263	
Thermal Resistance, Junction-to-Case	R_{thJC}	1.5	$^\circ\text{C/W}$
Thermal Resistance, Junction-to-Ambient	R_{thJA}	60	

**Specifications** $T_J = 25^\circ\text{C}$, unless otherwise noted

Parameter	Symbol	Test Conditions	Value			Unit
			Min.	Typ.	Max.	
Static						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	200	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 200V, V _{GS} = 0V, T _J = 25°C	--	--	1	μA
Gate-Source Leakage	I _{GSS}	V _{GS} = ±20V	--	--	±100	nA
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	2.0	--	4.0	V
Drain-Source On-Resistance (Note3)	R _{DS(on)}	V _{GS} = 10V, I _D = 15A	--	--	70	mR
Dynamic						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 25V, f = 1.0MHz	--	4200	--	pF
Output Capacitance	C _{oss}		--	284	--	
Reverse Transfer Capacitance	C _{rss}		--	90	--	
Total Gate Charge	Q _g	V _{DD} = 100V, I _D = 30A, V _{GS} = 10V	--	111	--	nC
Gate-Source Charge	Q _{gs}		--	12	--	
Gate-Drain Charge	Q _{gd}		--	54	--	
Turn-on Delay Time	t _{d(on)}	V _{DD} = 100V, I _D =30A, R _G = 25 Ω	--	46	--	ns
Turn-on Rise Time	t _r		--	51	--	
Turn-off Delay Time	t _{d(off)}		--	367	--	
Turn-off Fall Time	t _f		--	86	--	
Drain-Source Body Diode Characteristics						
Continuous Body Diode Current	I _S	T _C = 25 °C	--	--	30	A
Pulsed Diode Forward Current	I _{SM}		--	--	120	
Body Diode Voltage	V _{SD}	T _J = 25°C, I _{SD} = 15A, V _{GS} = 0V	--	--	1.4	V
Reverse Recovery Time	t _{rr}	V _{GS} = 0V,I _S = 10A, di _F /dt =100A /μs	--	210	--	ns
Reverse Recovery Charge	Q _{rr}		--	1.7	--	μC

Notes

1. Repetitive Rating: Pulse width limited by maximum junction temperature
2. $L = 10mH, V_{DD} = 50V, R_G = 25 \Omega$, Starting $T_J = 25^\circ\text{C}$
3. Pulse Test: Pulse width $\leq 300\mu s$, Duty Cycle $\leq 1\%$

Typical Characteristics $T_J = 25^\circ\text{C}$, unless otherwise noted

Figure 1. Output Characteristics ($T_J = 25^\circ\text{C}$)

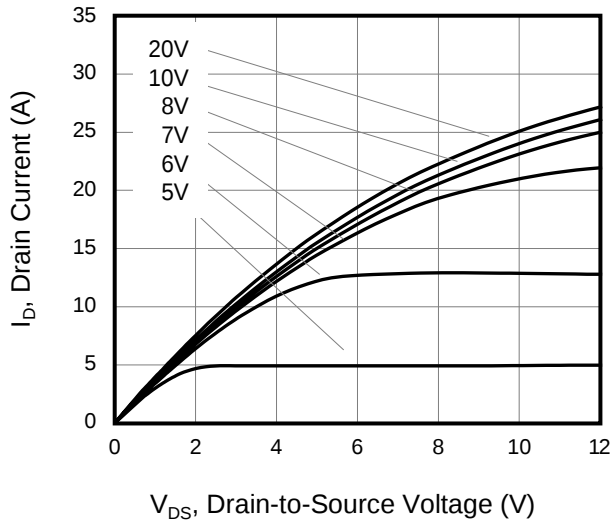


Figure 2. Body Diode Forward Voltage

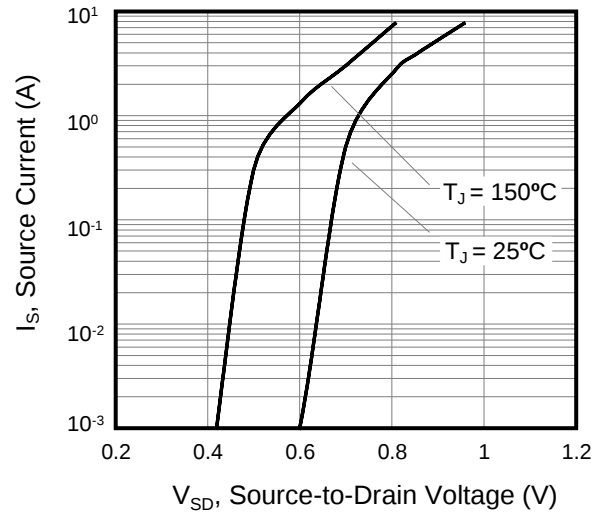


Figure 3. Drain Current vs. Temperature

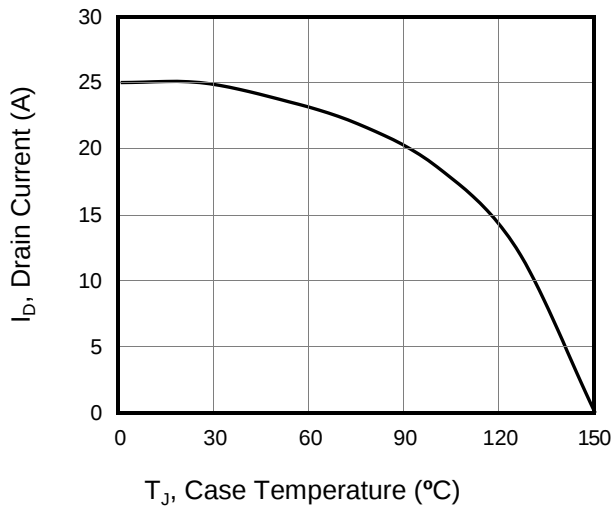


Figure 4. BV_{DSS} Variation vs. Temperature

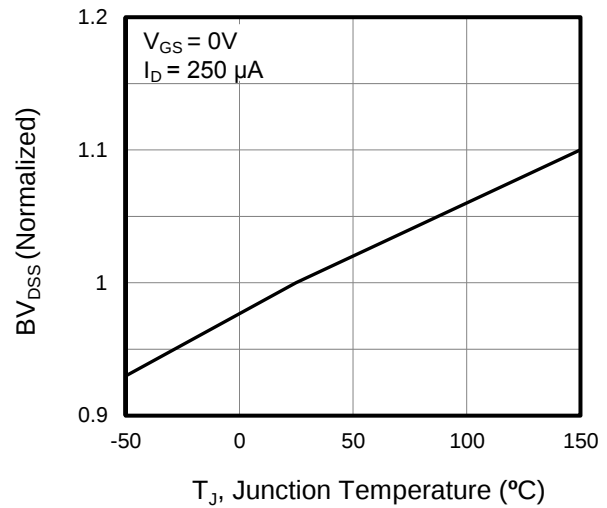


Figure 5. Transfer Characteristics

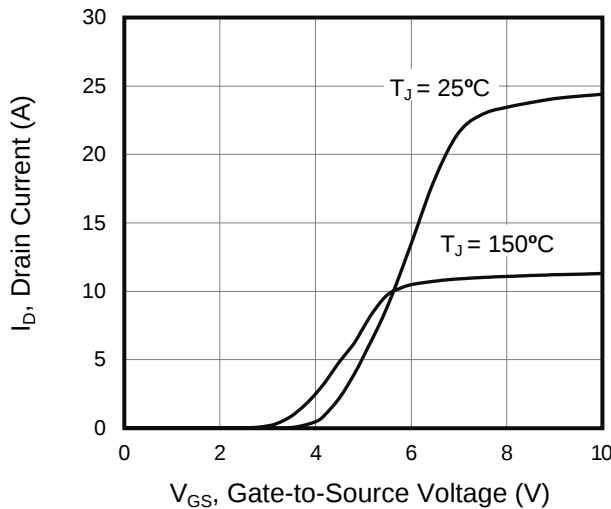
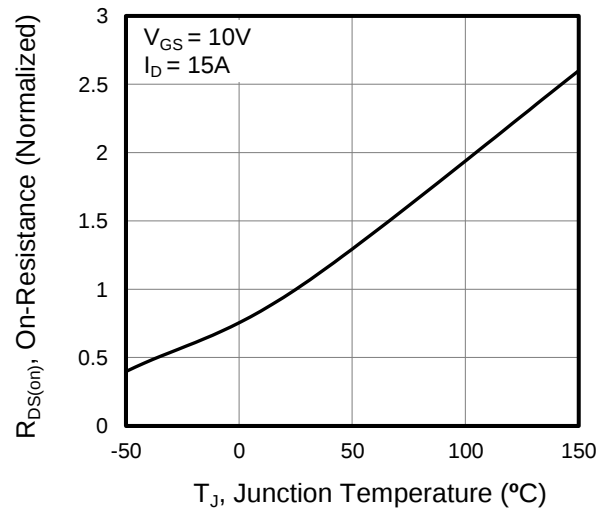


Figure 6. On-Resistance vs. Temperature



Typical Characteristics $T_j = 25^\circ\text{C}$, unless otherwise noted

Figure 7. Capacitance

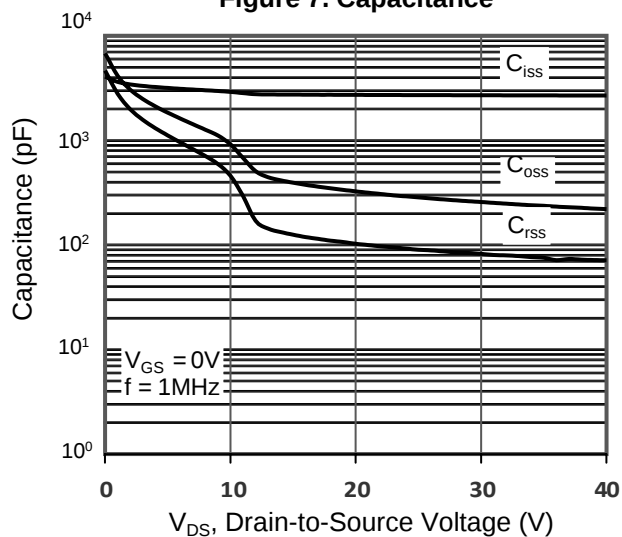


Figure 8. Gate Charge

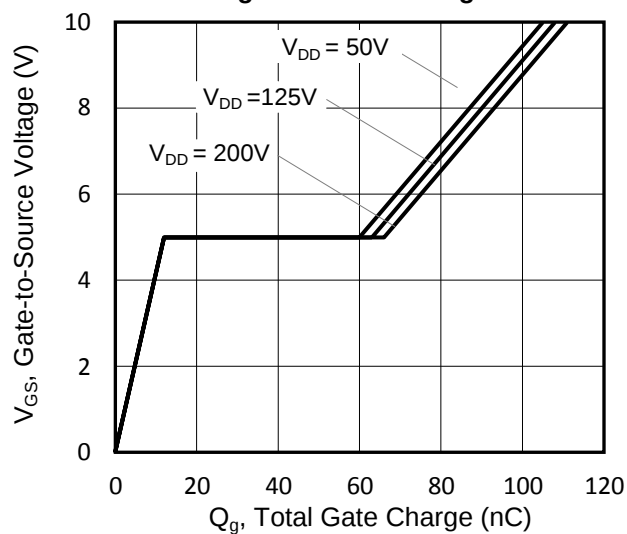
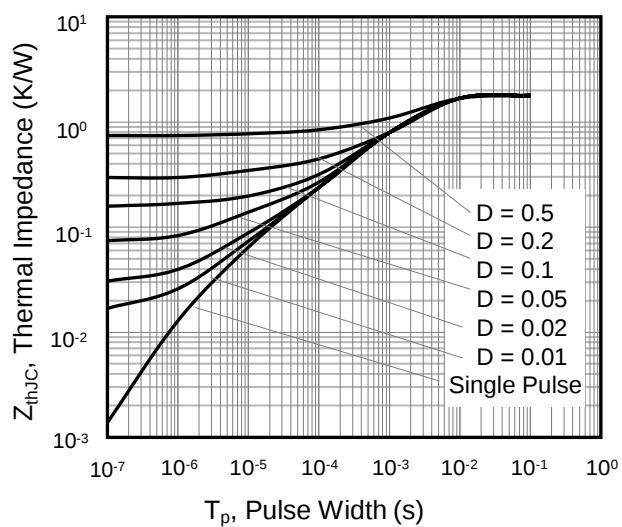
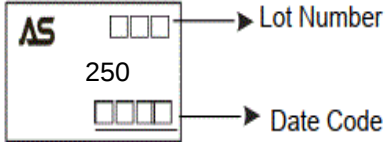


Figure 9. Transient Thermal Impedance

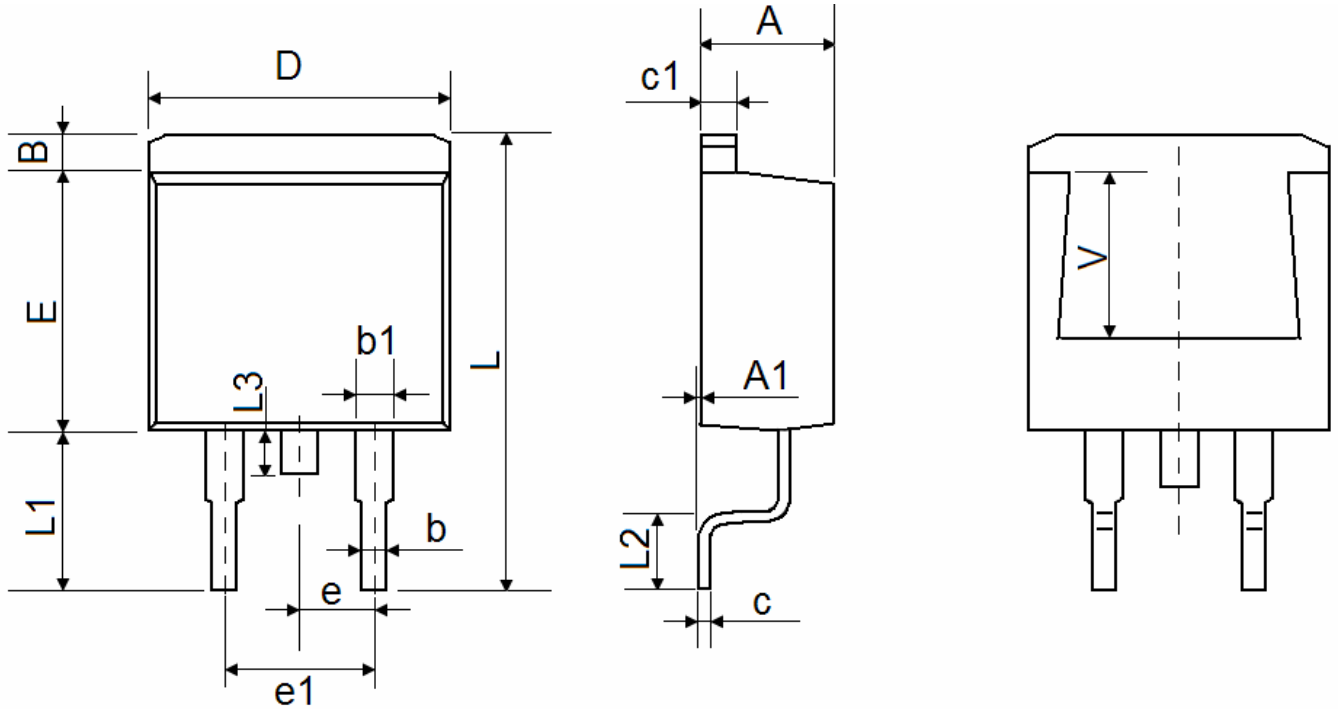


Ordering and Marking Information

Ordering Device No.	Marking	Package	Packing	Quantity
ASDM250G-R	250	TO-263	Reel&Tape	800/Reel

PACKAGE	MARKING
TO-263	 The marking diagram shows a rectangular package with the following markings: 'AS' logo, '250', a four-digit 'Lot Number' (indicated by four boxes), and a four-digit 'Date Code' (indicated by four boxes). Arrows point from the text 'Lot Number' and 'Date Code' to their respective boxes.

TO-263- Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.470	4.670		
A1	0.000	0.150		
B	1.170	1.370		
b	0.710	0.910		
b1	1.170	1.370		
c	0.310	0.530		
c1	1.170	1.370		
D	10.0 0	10.310	0.394	0.406
E	8.500	8.900		
e	2.540 TYP.		0.100 TYP.	
e1	4.980	5.180		
L	15.0 0	15.450	0.593	0.608
L1	5.080	5.480		
L2	2.340	2.740		
L3	1.300	1.700		
V	5.600 REF		0.220 REF	

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