ASDM20N12ZB

20V N-CHANNEL MOSFET

Features

- 20V/12A
- Super High Dense Cell Design
- Reliable and Rugged
- Lead Free Available (RoHS Compliant)

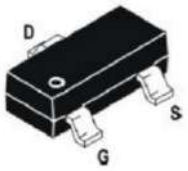
Product Summary

V_{DS}	20	V
$R_{DS(on),Typ}$@ V_{GS}=4.5 V	11.5	mΩ
I_D	12	A

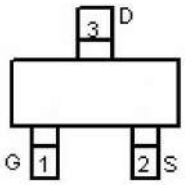
Applications

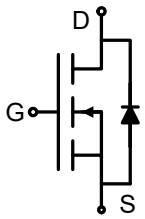
- Portable Equipment and Battery Powered Systems.
- DC-DC converter
- Load Switch

Top view



SOT-23-3





Absolute Maximum Ratings (T_A=25°C Unless Otherwise Noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	20	V
Drain Current - Continuous	I_D(Ta=25℃)	12	A
Drain Current - Continuous	I_D(Ta=70℃)	4.8	A
Drain Current – Pulsed	I_{DM}	48	A
Gate-Source Voltage	V_{GS}	±8.0	V
Maximum Power Dissipation	P_D(Ta=25℃)	1.14	W
Thermal Resistance Junction-to-Ambient	$R_{\theta JA}$	110	℃/ W
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55 ~ 150	℃

Electrical Characteristics (T_A=25°C Unless Otherwise Noted)

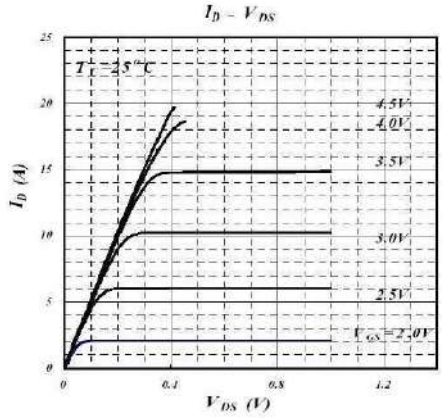
Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V	I_D=250μA	20			V
Drain-Source Leakage Current(T=25℃)	I_{DSS}	V_{DS}=16V	V_{GS}=0V			1	μA
Drain-Source Leakage Current(T=70℃)	I_{DSS}	V_{DS}=16V	V_{GS}=0V			30	μA
Gate-Source Leakage Current	I_{GSS}	V_{GS}=±8V	V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}	I_D=250μA	0.55		0.95	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=4.5V	I_D= 5 A		11.5	12.5	mΩ
		V_{GS}=2.5V	I_D= 3 A		15.5	16.5	mΩ
Forward Transconductance	g_{FS}	V_{DS}=10V	I_D=6.0A		20		S
Forward On Voltage	V_{SD}	V_{GS}=0V	I_S=1.7A			1.3	V
Input Capacitance	C_{iss}	V_{DS}=20V f=1.0MHz	V_{GS}=0V		1035		pF
Output Capacitance	C_{oss}				320		pF
Reverse Transfer Capacitance	C_{rss}				150		pF
Turn-on Delay Time	$t_{d(on)}$	V_{DS}=10V V_{GS}=5V R_D=10Ω	I_D=1A R_G=6Ω		30		ns
Rise Time	t_r				70		ns
Turn-off Delay Time	$t_{d(off)}$				40		ns
Fall Time	t_f				65		ns

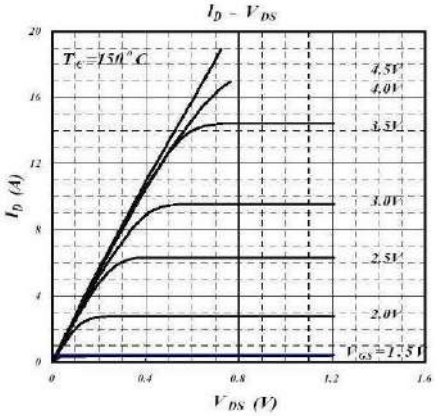
Notes:

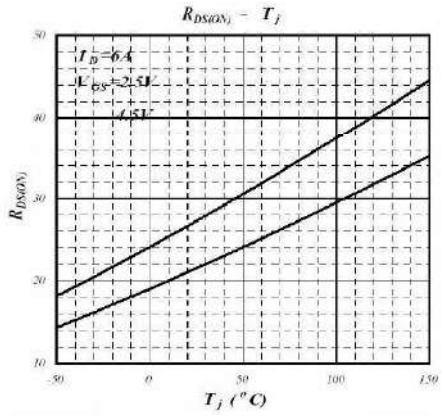
1、Surface Mounted on FR4 Board, t ≤ 10 sec.

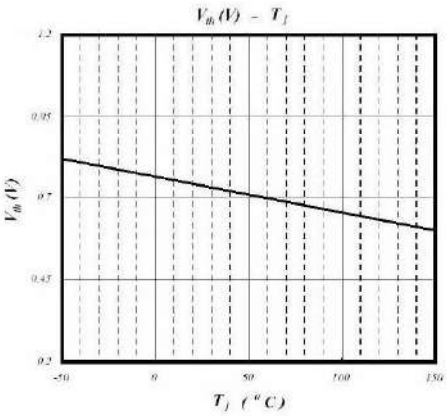
2、Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤2%.

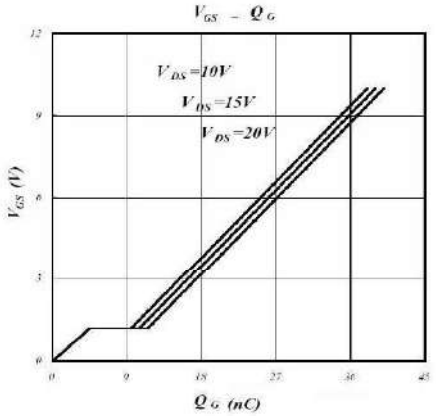
■ Typical Performance Characteristics

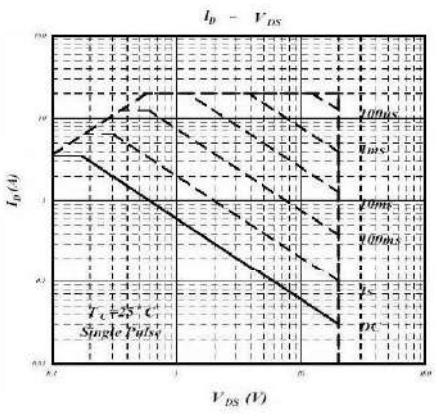


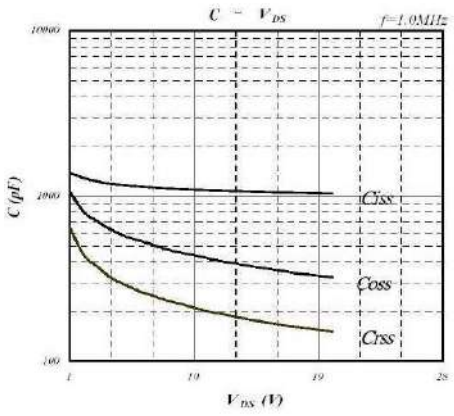


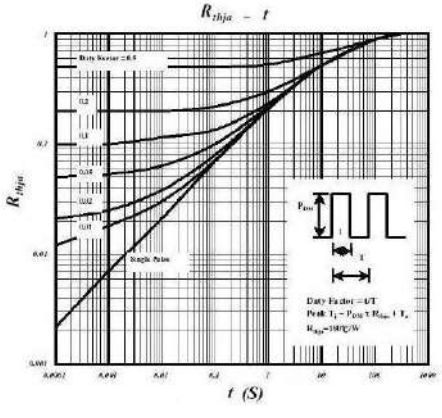










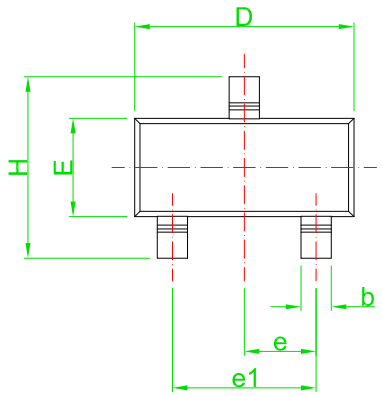


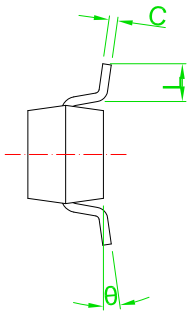
Ordering and Marking Information

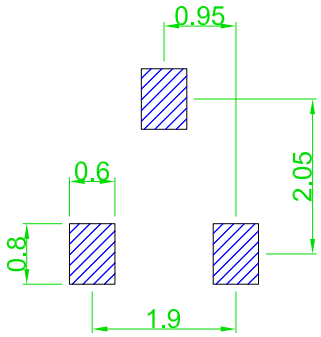
Ordering Device No.	Marking	Package	Packing	Quantity
ASDM20N12ZB-R	20N12	SOT-23-3	Tape&Reel	3000/Reel

PACKAGE	MARKING
SOT-23-3	**20N12**

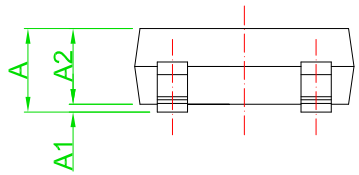
SOT-23-3 PACKAGE IN FORMATION



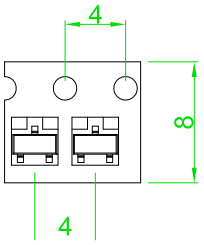




Recommended Land Pattern



Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	0.90	1.15	0.035	0.045
A1	0.00	0.10	0.000	0.004
A2	0.90	1.05	0.035	0.041
b	0.30	0.55	0.012	0.022
C	0.08	0.15	0.003	0.006
D	2.80	3.00	0.110	0.118
E	1.20	1.40	0.047	0.055
e	0.95 TYP		0.037 TYP	
e1	1.80	2.00	0.071	0.079
H	2.25	2.55	0.089	0.100
L	0.30	0.50	0.012	0.020
θ	0°	8°	0°	8°



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