



Features

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

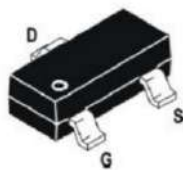
Product Summary

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

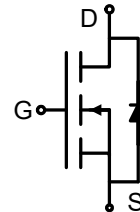
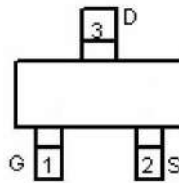
Applications

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

Top view



SOT-23-3



Absolute Maximum Ratings ($T_A=25^{\circ}C$ Unless Otherwise Noted)

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

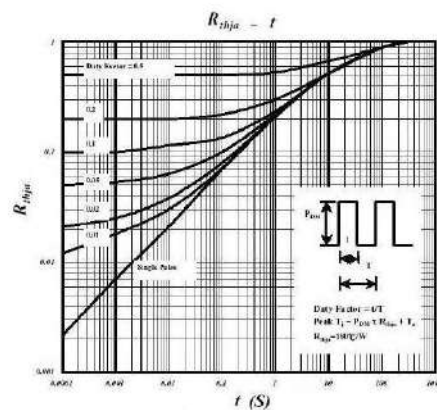
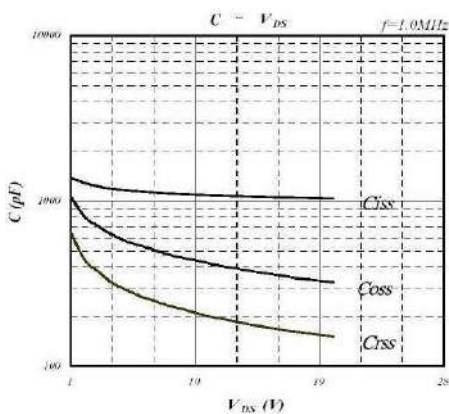
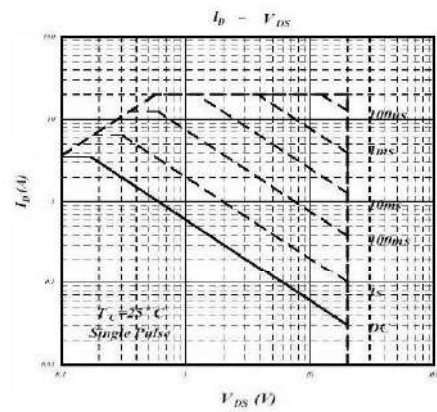
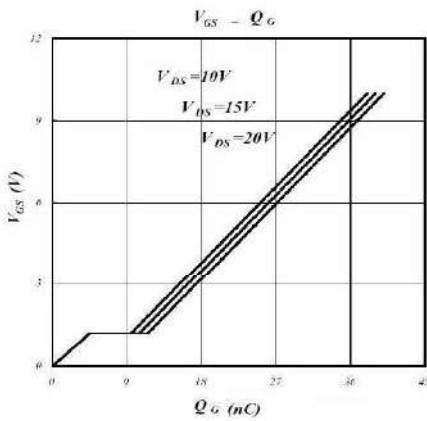
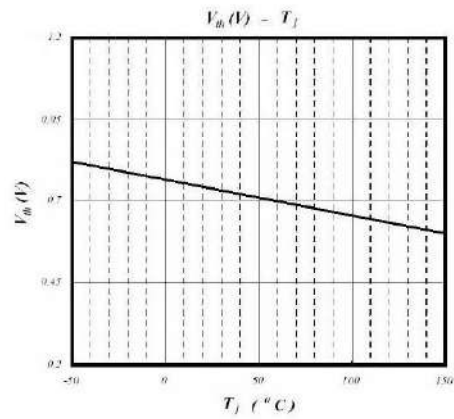
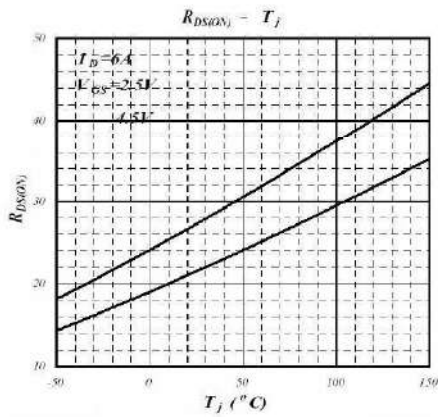
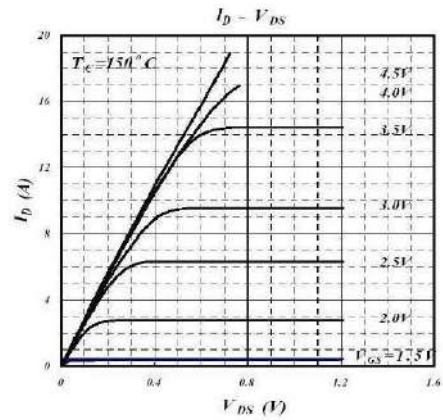
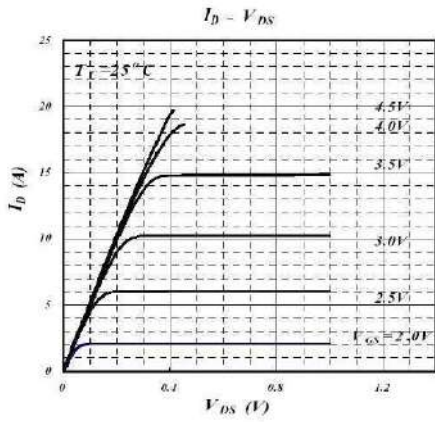
Electrical Characteristics (T_A=25°C Unless Otherwise Noted)

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°C)	I _{DSS}	V _{DS} =16V V _{GS} =0V			1	μA
Drain-Source Leakage Current(T=70°C)	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 V _{GS} =0V f=1.0MHz		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 I _D =1A V _{GS} =5V R _G =6Ω R _D =10Ω		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



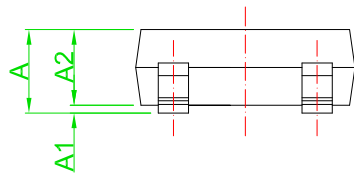
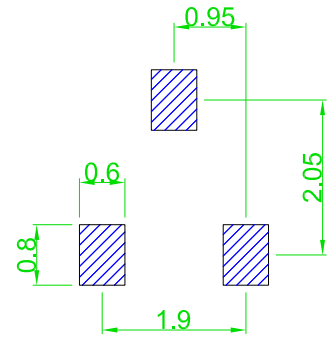
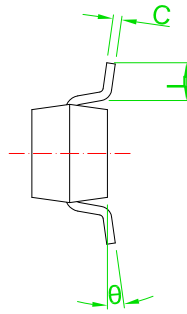
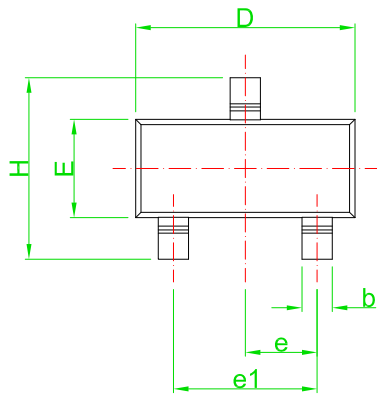
Ordering and Marking Information

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

PACKAGE	MARKING
SOT-23-3	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">20N12</div>

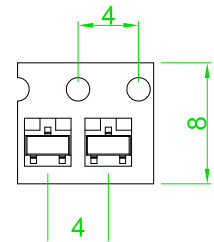


SOT-23-3 PACKAGE IN FORMATION



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
theta	0°	8°	0°	8°



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