

Features

- Super High Dense Cell Design
- Reliable and Rugged
- Lead Free Available (RoHS Compliant)

Applications

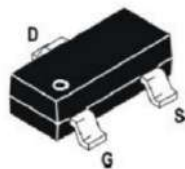
- Portable Equipment and Battery Powered Systems
- DC-DC converter
- Load Switch

Product Summary

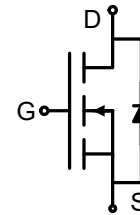
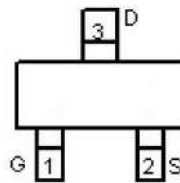


V_{DS}	20	V
$R_{DS(on), Typ @ V_{GS}=4.5 V}$	11.5	m Ω
I_D	12	A

Top view



SOT23-3



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

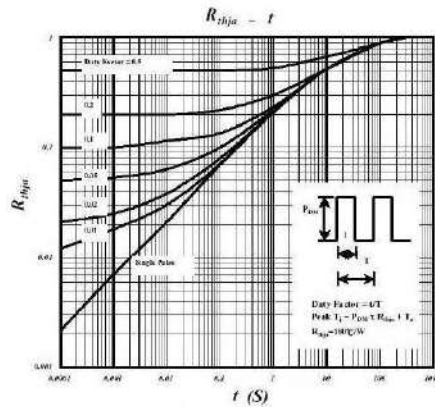
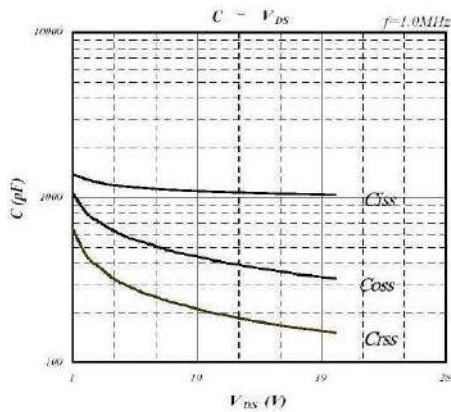
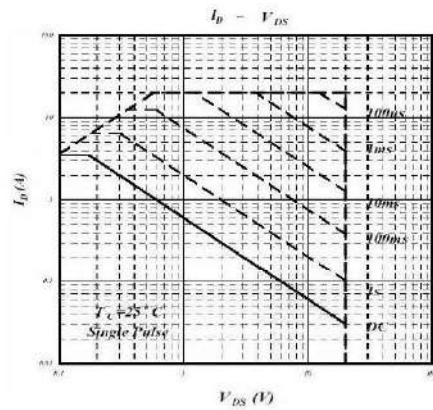
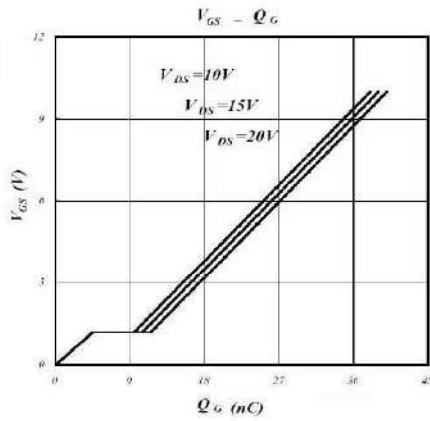
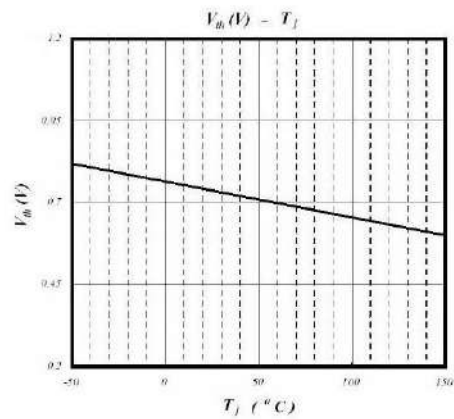
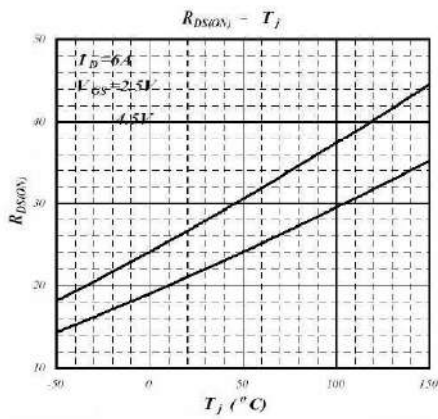
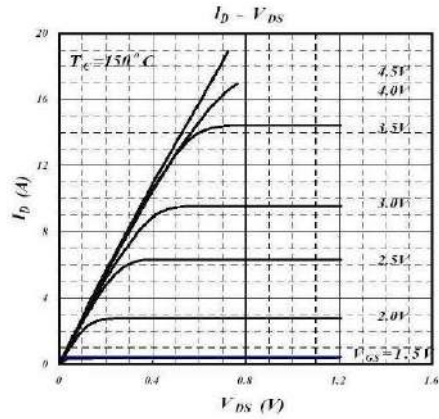
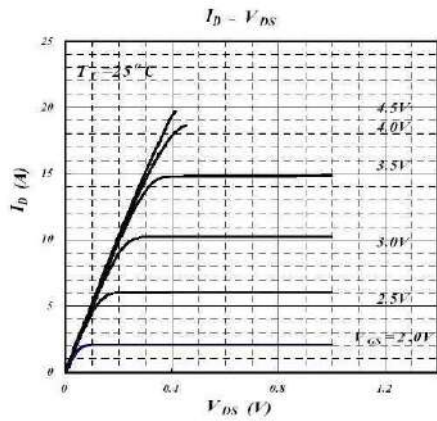
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	20	V
Drain Current - Continuous	$I_D(T_a=25^\circ C)$	12	A
Drain Current - Continuous	$I_D(T_a=70^\circ C)$	4.8	A
Drain Current – Pulsed	I_{DM}	48	A
Gate-Source Voltage	V_{GS}	±8.0	V
Maximum Power Dissipation	$P_D(T_a=25^\circ C)$	1.14	W
Thermal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

Electrical Characteristics ($T_A=25^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$	$I_D=250\mu A$	20			V
Drain-Source Leakage Current($T=25^\circ\text{C}$)	I_{DSS}	$V_{DS}=16V$	$V_{GS}=0V$			1	μA
Drain-Source Leakage Current($T=70^\circ\text{C}$)	I_{DSS}	$V_{DS}=16V$	$V_{GS}=0V$			30	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8V$	$V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$	$I_D=250\mu A$	0.55		0.95	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.5V$	$I_D= 5 A$		11.5	12	m Ω
		$V_{GS}=2.5V$	$I_D= 3 A$		19.5	20	m Ω
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}	$V_{DS}=20V$ $f=1.0MHz$	$V_{GS}=0V$		602		pF
Output Capacitance	C_{oss}				186		pF
Reverse Transfer Capacitance	C_{rss}				87		pF
Turn-on Delay Time	$t_{d(on)}$	$V_{DS}=10V$ $V_{GS}=5V$ $R_D=10\Omega$	$I_D=1A$ $R_G=6\Omega$		30		ns
Rise Time	t_r				70		ns
Turn-off Delay Time	$t_{d(off)}$				40		ns
Fall Time	t_f				65		ns

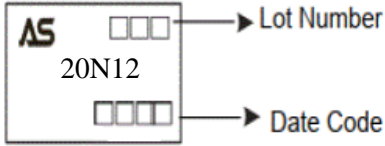
Notes:

- 1、Surface Mounted on FR4 Board, $t \leq 10$ sec.
- 2、Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

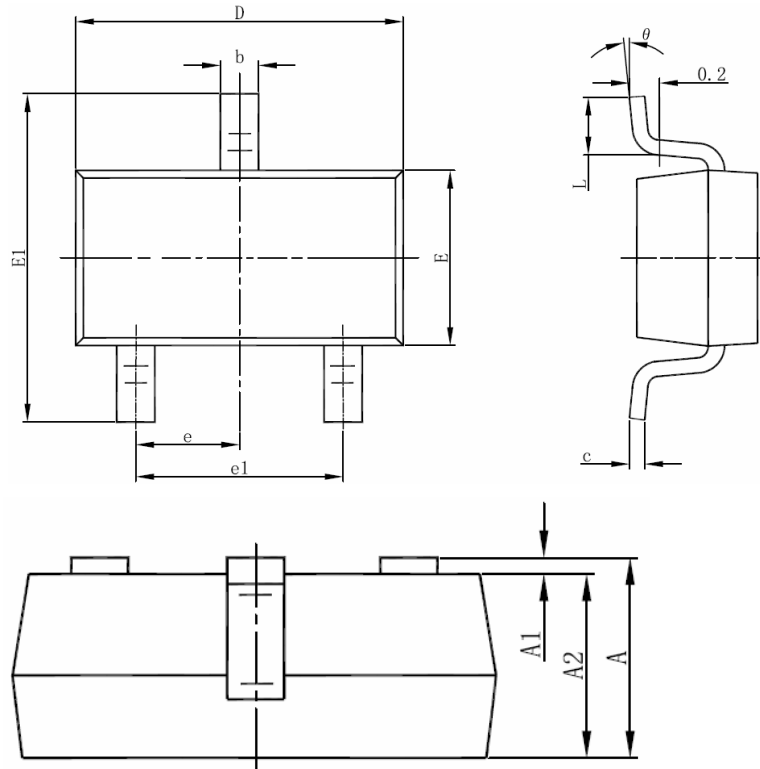


Ordering and Marking Information

Ordering Device No.	Marking	Package	Packing	Quantity
ASDM20N12ZB-R	20N12	SOT23-3	Tape&Reel	3000/Reel

PACKAGE	MARKING
SOT23-3	 <p>AS □□□ → Lot Number 20N12 □□□□ → Date Code</p>

SOT-23-3L PACKAGE INFORMATION



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

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