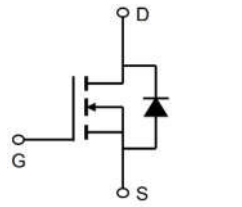
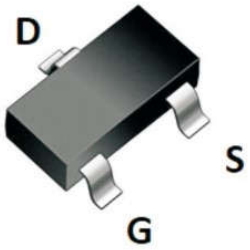
200V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	2A
V_{DSS}	200V
R_{DSON}-typ(@V_{GS}=10V)	< 1800mΩ(Type:1400 mΩ)





SOT23-3L

Marking Code	
YFW2N20MI	MB3-2A

Application

- LED dimming
- Emergency lamp

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	200	V
Gate - Source Voltage	V_{GS}	±20	V
Drain Current- Continuous	I_D	2	A
Drain Current-Pulsed (Note 1)	I_{DM}	10	A
Maximum Power Dissipation	P_D	3	W
Operating Junction and Storage Temperature Range	T_J ,T_{STG}	-55 to +150	°C
Thermal Resistance, Junction –to-ambient(Note 2)	$R_{\theta JA}$	41.7	°C/W

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250uA	BV_{DSS}	200	-	-	V
Zero Gate Voltage Drain Current	V_{DS}=200V , V_{GS}=0V	I_{DSS}	-	-	1	μA
Gate- Body Leakage Current	V_{GS}=±20V, V_{DS}=0V	I_{GSS}	-	-	±100	nA
Gate Threshold Voltage	V_{DS}= V_{GS}, I_D=250μA	$V_{GS(th)}$	1.0	-	3.0	V
Drain-Source On-State Resistance	V_{GS}=10V, I_D=2A	$R_{DS(ON)}$	-	1400	1800	mΩ
Forward Transconductance	V_{DS}=15V, I_D=2A	g_{fs}	-	8	-	S
Input Capacitance	V_{DS}=25V V_{GS}=0V f=1.0MHz	C_{iss}	-	580	-	pF
Output Capacitance		C_{oss}	-	90	-	
Reverse Transfer Capacitance		C_{rss}	-	3	-	
Turn-on delay time	V_{DD}=100V R_L=15Ω V_{GS}=10V R_G=2.5Ω	$t_{d(on)}$	-	10	-	nS
Turn-on Rise Time		T_r	-	12	-	
Turn-Off Delay Time		$t_{d(OFF)}$	-	15	-	
Turn-Off Fall Time		t_f	-	15	-	
Total Gate Charge	V_{DS}=100V I_D=2A V_{GS}=10V	Q_g	-	12	-	nC
Gate-Source Charge		Q_{gs}	-	2.5	-	
Gate-Drain Charge		Q_{gd}	-	3.8	-	
Diode Forward Voltage (Note 3)	V_{GS}=0V , I_S=2A	V_{SD}	-	-	1.2	V
Diode Forward Current(Note 2)		I_S	-	-	2	A

Notes:
1、Repetitive Rating: Pulse width limited by maximum junction temperature.
2、Surface Mounted on FR4 Board, t ≤ 10 sec.
3、Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.
4、Guaranteed by design, not subject to production

Ratings and Characteristic Curves

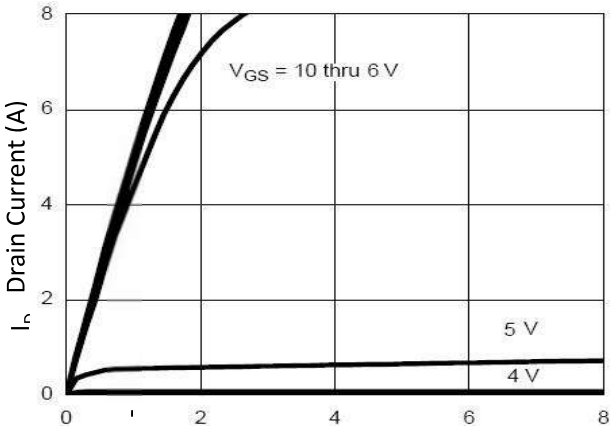


Figure 1 Output Characteristics

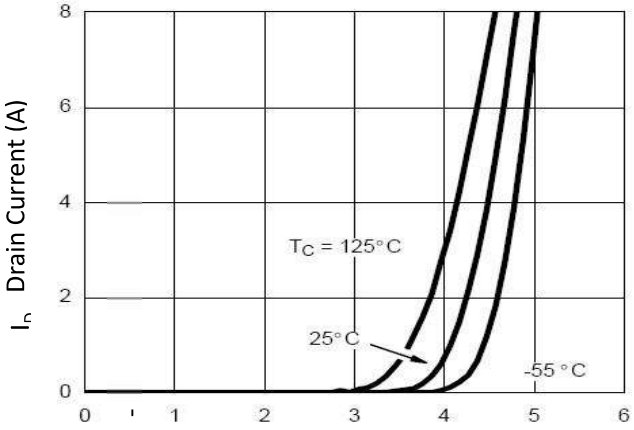


Figure 2 Transfer Characteristics

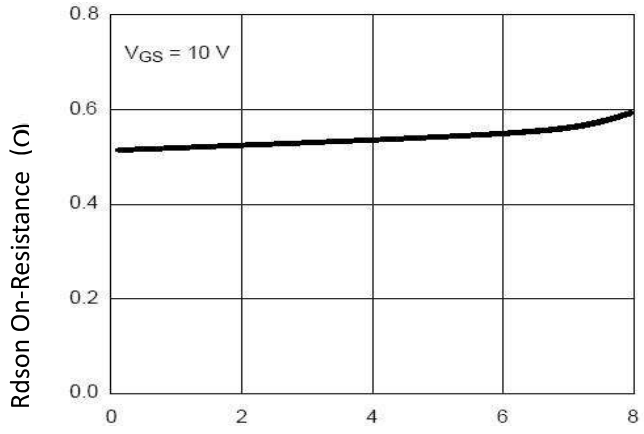


Figure 3 Rdson- Drain Current

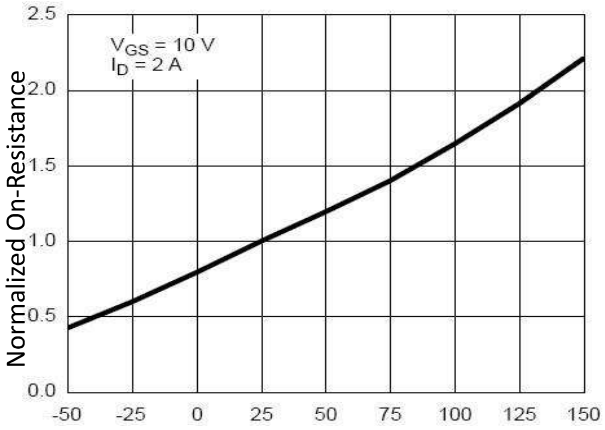


Figure 4 Rdson-JunctionTemperature

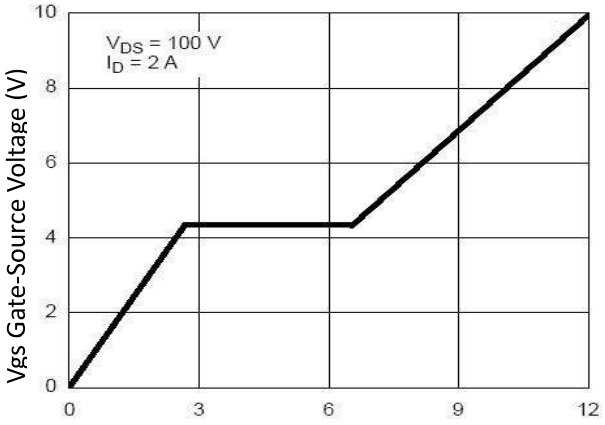


Figure 5 Gate Charge

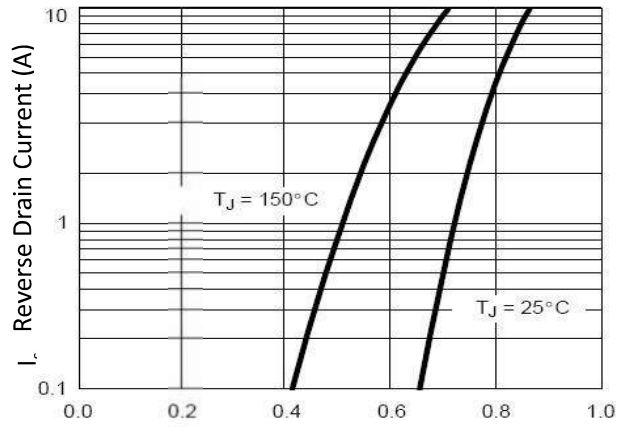


Figure 6 Source- Drain Diode Forward

Ratings and Characteristic Curves

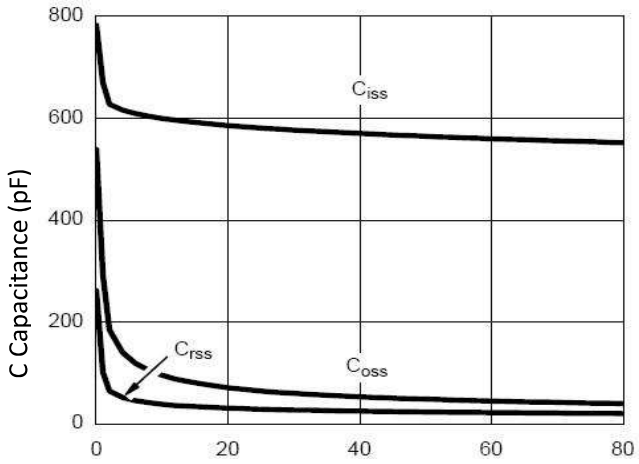


Figure 7 Capacitance vs Vds

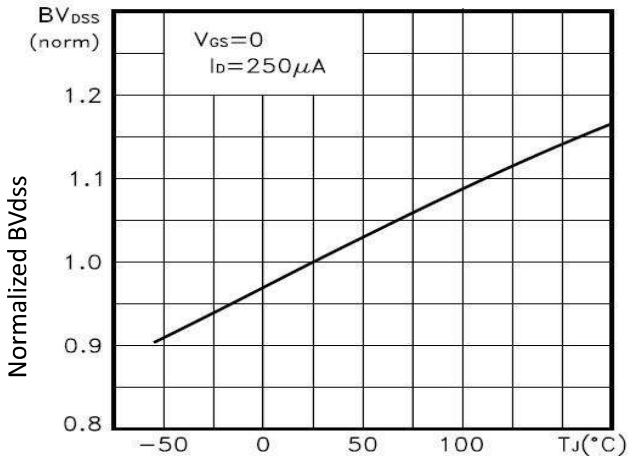


Figure 9 BV_{DSS} vs Junction Temperature

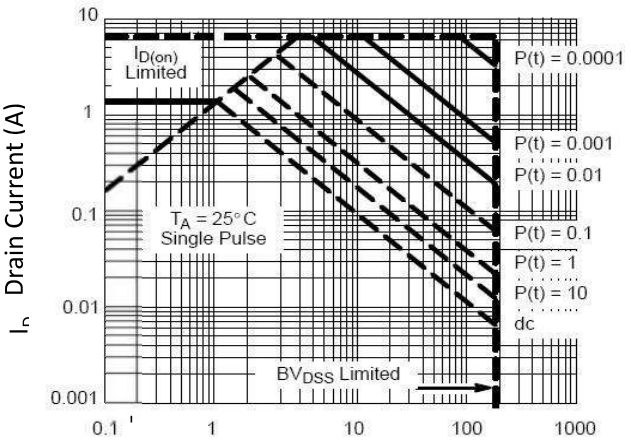


Figure 8 Safe Operation Area

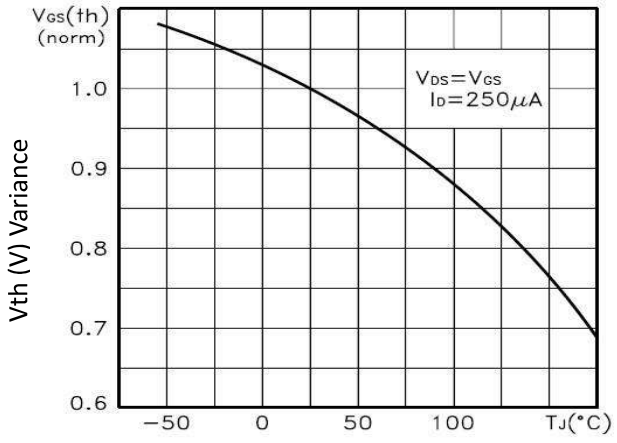


Figure 10 $V_{GS(th)}$ vs Junction Temperature

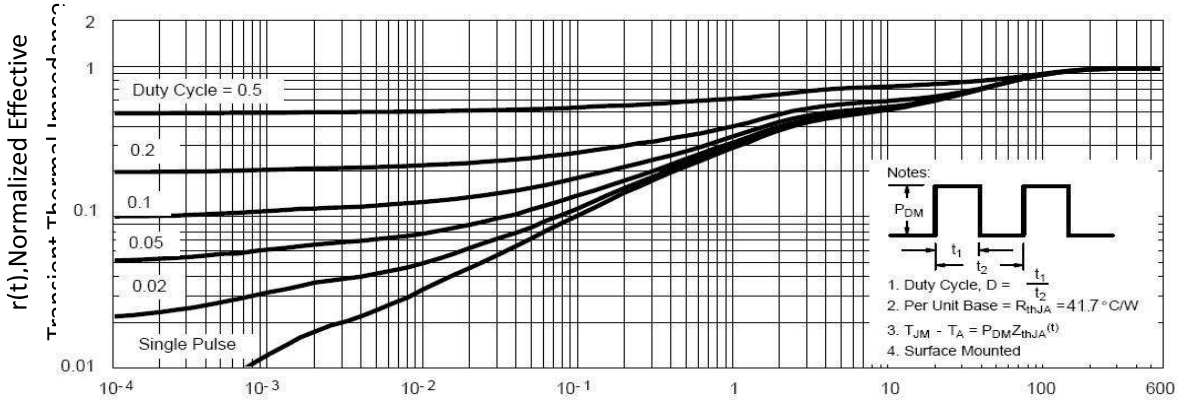


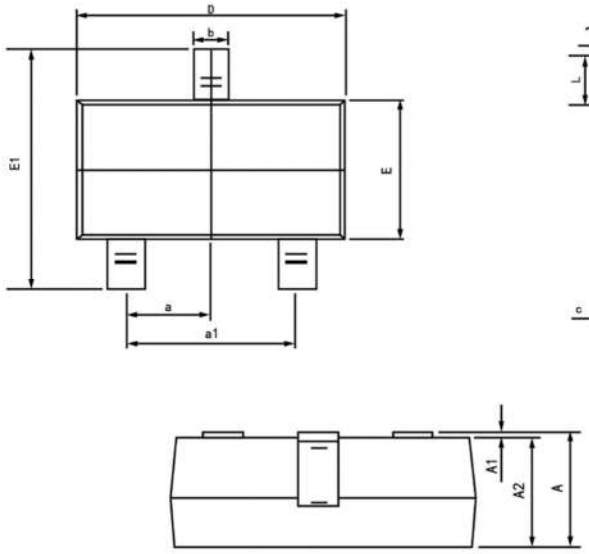
Figure 11 Normalized Maximum Transient Thermal Impedance

Ordering information

Package	Packing Description	Base Quantity	Packing Quantity
SOT23-3L	Tape/Reel,7"reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

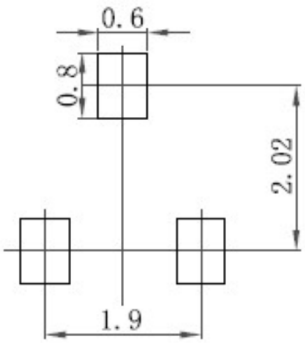
Package Dimensions

SOT23-3L



Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	1.05	1.25	41	49.2
A1	0.10		3.93	
A2	1.05	1.15	41	45
b	0.30	0.50	12	20
c	0.10	0.20	3.93	7.9
D	2.82	3.02	111	119
E	1.50	1.70	59	67
E1	2.65	2.95	104	116
e	0.95		37.4	
e1	1.80	2.00	71	78
L	0.30	0.066	12	26
Θ	8°			

The recommended mounting pad size



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