

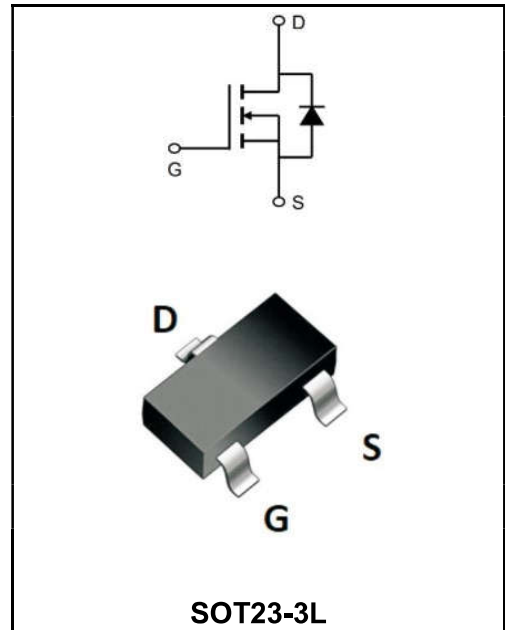
200V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

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

Application

- ◆ LED dimming
- ◆ Emergency lamp



Product Specification Classification

Part Number	Package	Marking	Pack
YFW2N20MI	SOT23-3L	MB3-2A	3000PCS/Tape

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)	$R_{θJA}$	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	$V_{GS}=0V, I_D=250\mu A$	BV_{DSS}	200	-	-	V
Zero Gate Voltage Drain Current	$V_{DS}=200V, V_{GS}=0V$	I_{DSS}	-	-	1	μA
Gate- Body Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	I_{GSS}	-	-	± 100	nA
Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{GS(th)}$	1.0	-	3.0	V
Drain-Source On-State Resistance	$V_{GS}=10V, I_D=2A$	$R_{DS(ON)}$	-	1400	1800	m Ω
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	$V_{DD}=100V$ $R_L=15\Omega$ $V_{GS}=10V$ $R_G=2.5\Omega$	$t_{d(on)}$	-	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, $t \leq 10$ sec.
- 3、Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
- 4、Guaranteed by design, not subject to production

Ratings and Characteristic Curves

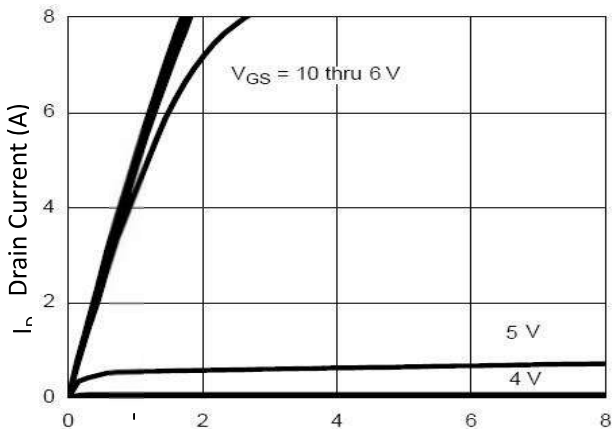


Figure 1 Output Characteristics

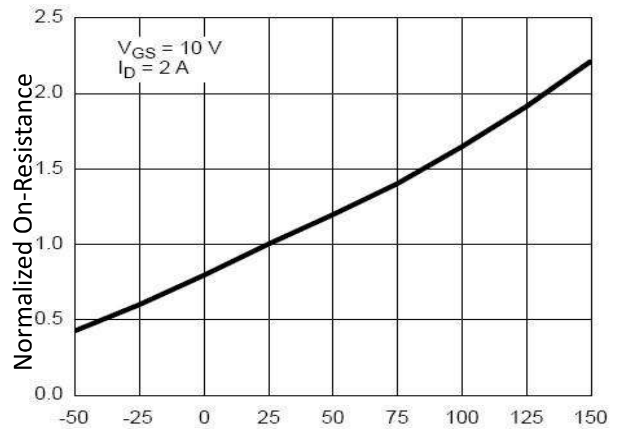


Figure 4 Rdson-Junction Temperature

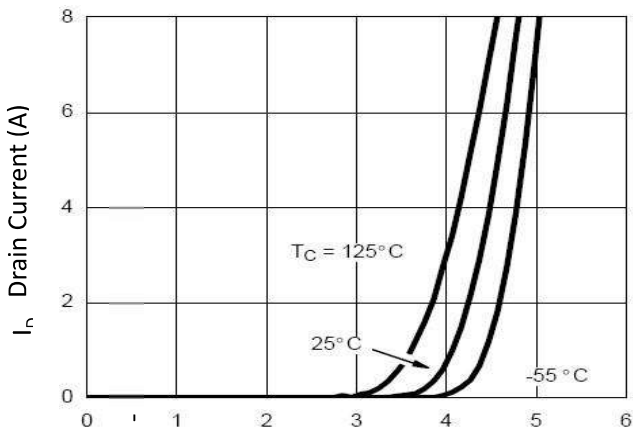


Figure 2 Transfer Characteristics

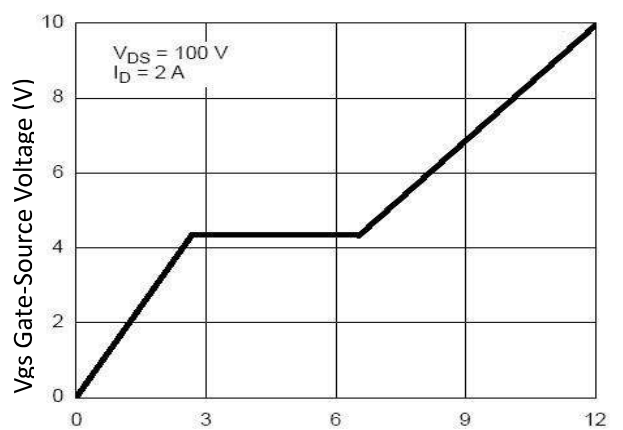


Figure 5 Gate Charge

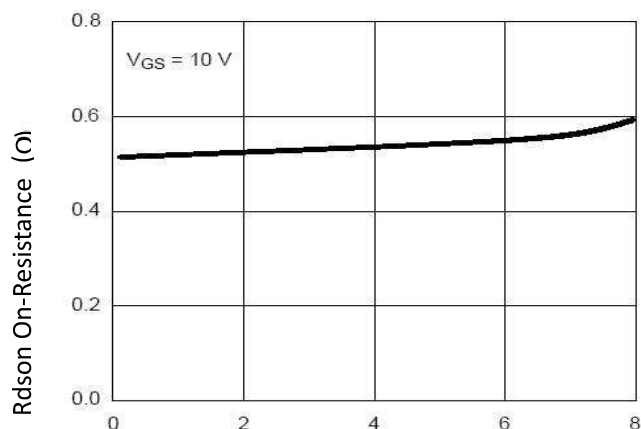


Figure 3 Rdson- Drain Current

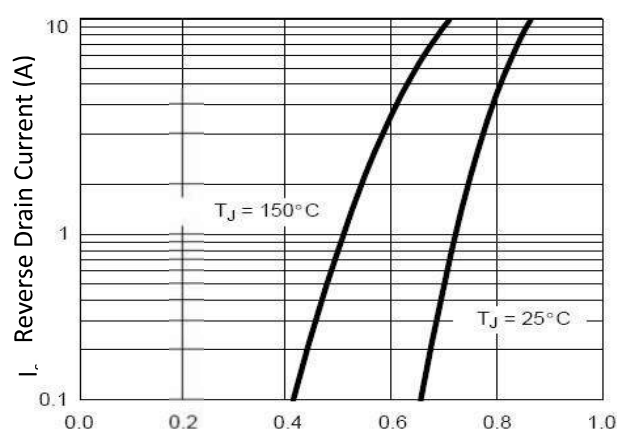


Figure 6 Source- Drain Diode Forward

Ratings and Characteristic Curves

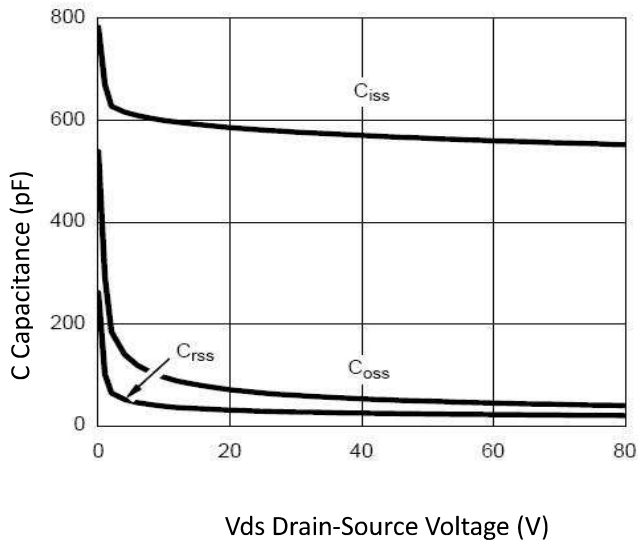


Figure 7 Capacitance vs Vds

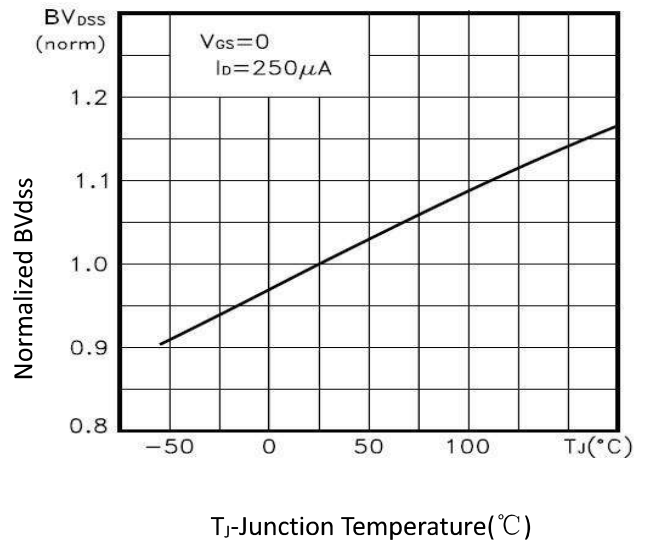


Figure 9 BV_{DSS} vs Junction Temperature

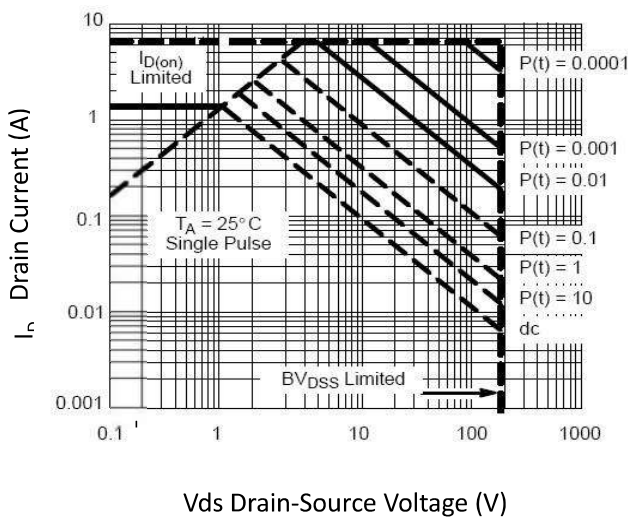


Figure 8 Safe Operation Area

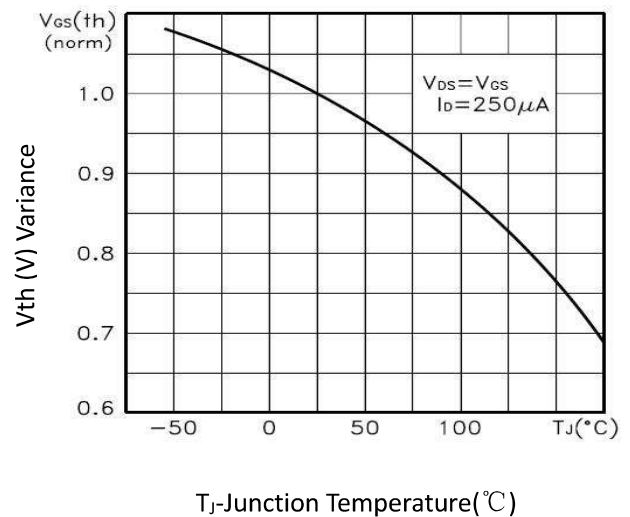


Figure 10 V_{GS(th)} vs Junction Temperature

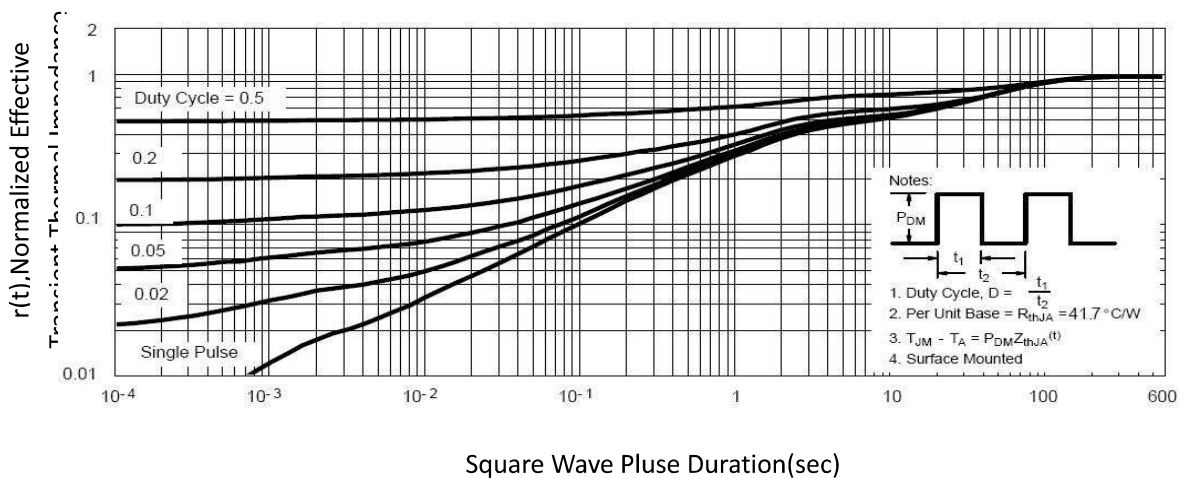
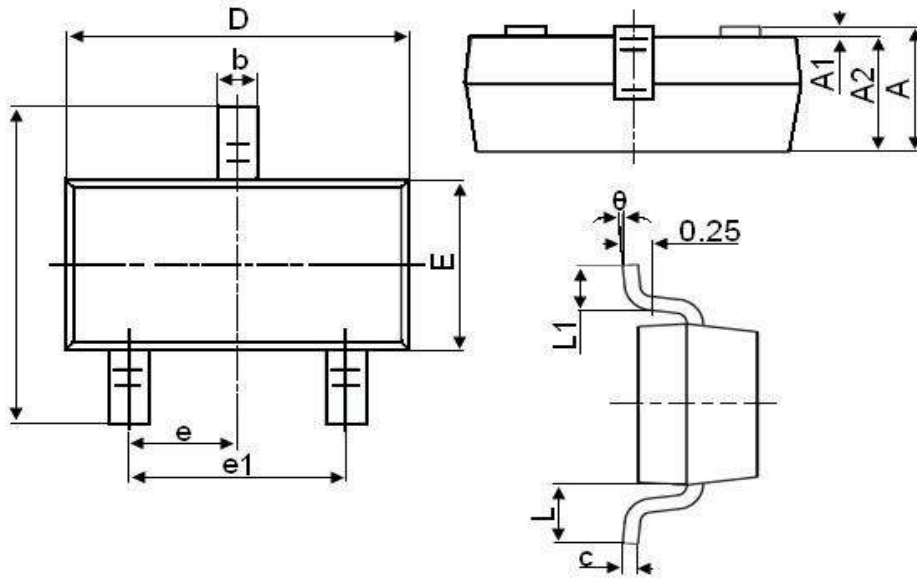


Figure 11 Normalized Maximum Transient Thermal Impedance

SOT23-3L



Symbol	Dimensions in Millimeters	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°