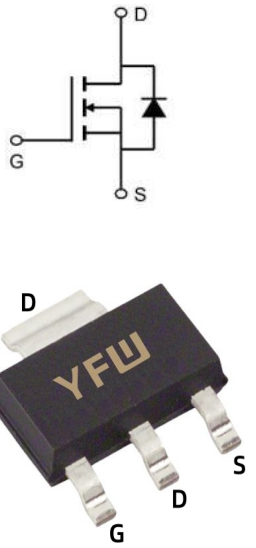
100V N-CHANNEL ENHANCEMENT MODE MOSFET

MAIN CHARACTERISTICS

I_D	8A
V_{DSS}	100V
R_{DSON}-typ(@V_{GS}=10V)	< 100mΩ(Type:88 mΩ)



SOT-223

Application

- Automative lighting
- Load switch
- Uninterruptible power supply

Marking Code	
YFW8N10MSI	YFW 8N10MSI XXXXX

Maximum Ratings at Tc=25°C unless otherwise specified

Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	100	V
Gate - Source Voltage	V_{GS}	±20	V
Drain Current, V_{GS} @ 10V @T_C=25℃	I_D	8	A
Drain Current, V_{GS} @ 10V @T_C=100℃	I_D	6.5	A
Pulsed Drain Current[1]	I_{DM}	24	A
Total Power Dissipation @T_C=25℃	P_D	30	W
Total Power Dissipation[3] @T_A=25℃	P_D	2.7	W
Storage Temperature Range	T_{STG}	-55 to +150	°C
Operating Junction Temperature Range	T_J	-55 to +150	°C
Maximum Thermal Resistance, Junction ambient	$R_{\theta JA}$	100	°C/W
Maximum Thermal Resistance, Junction-case	$R_{\theta JC}$	5.1	°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	V(BR)DSS	100	107	-	V
Zero Gate Voltage Drain Current	V_{DS}=100V , V_{GS}=0V	I_{DSS}	-	-	1.0	μA
Gate to 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	1.5	2.5	V
Static Drain-Source on-Resistance note3	V_{GS}=10V, I_D=5A	$R_{DS(ON)}$	-	88	110	mΩ
	V_{GS}=4.5V, I_D=3A		-	96	140	
Input Capacitance	V_{DS}=25V V_{GS}=0V f=1.0MHz	C_{iss}	-	765	-	pF
Output Capacitance		C_{oss}	-	38	-	
Reverse Transfer Capacitance		C_{rss}	-	33	-	
Total Gate Charge	V_{DS}=30V V_{GS}=10V I_D=5A	Q_g	-	12	-	nC
Gate-Source Charge		Q_{gs}	-	2.2	-	
Gate-Drain(“Miller”) Charge		Q_{gd}	-	2.5	-	
Turn-on delay time	V_{DS}=30V I_D=10A R_G=1.8Ω V_{GS}=10V	$t_{d(on)}$	-	7	-	ns
Turn-on Rise Time		T_r	-	5	-	
Turn-Off Delay Time		$t_{d(OFF)}$	-	16	-	
Turn-Off Fall Time		t_f	-	6	-	
Maximum Continuous Drain to Source Diode Forward Current		I_S	-	-	10	A
Maximum Pulsed Drain to Source Diode Forward Current		I_{SM}	-	-	40	A
Drain to Source Diode Forward Voltage	V_{GS}=0V , I_S=10A	V_{SD}	-	-	1.2	V
Body Diode Reverse Recovery Time	I_F=1A , dI/dt=100A/μs	t_{rr}	-	21	-	ns
Body Diode Reverse Recovery Charge		Q_{rr}	-	21	-	nC

Note :
1、The data tested by surface mounted on a 1 inch 2 FR-4 board with 2OZ copper.
2、The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%
3、The power dissipation is limited by 150℃ junction temperature
4、The data is theoretically the same as I D and I DM , in real applications , should be limited by total power dissipation.

Ratings and Characteristic Curves

Typical Characteristics

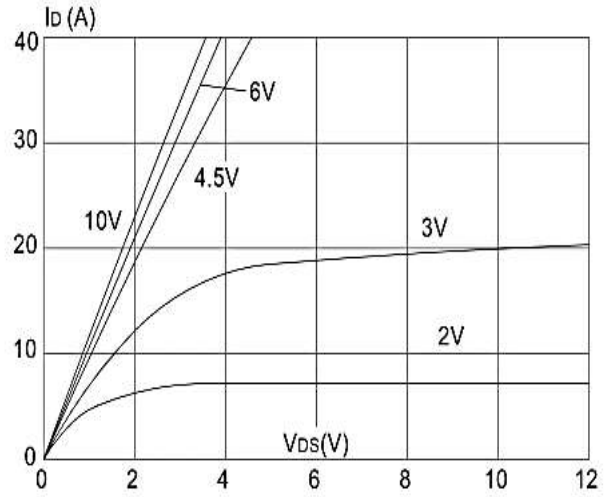


Figure1: Output Characteristics

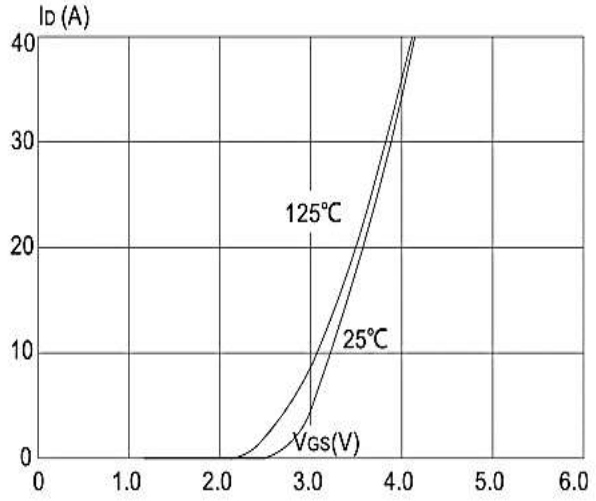


Figure 2: Typical Transfer Characteristics

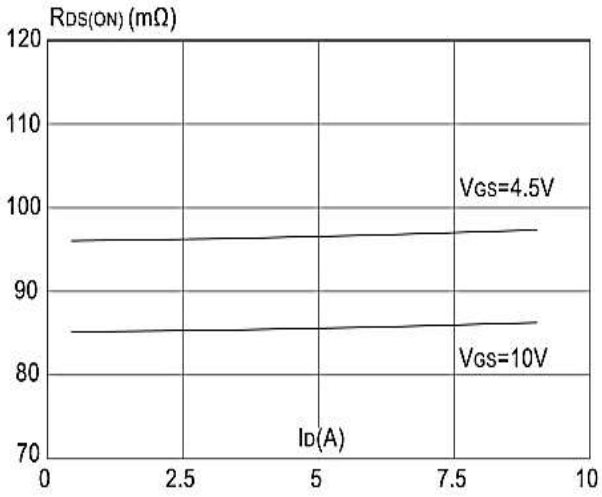


Figure 3:On-resistance vs. Drain Current

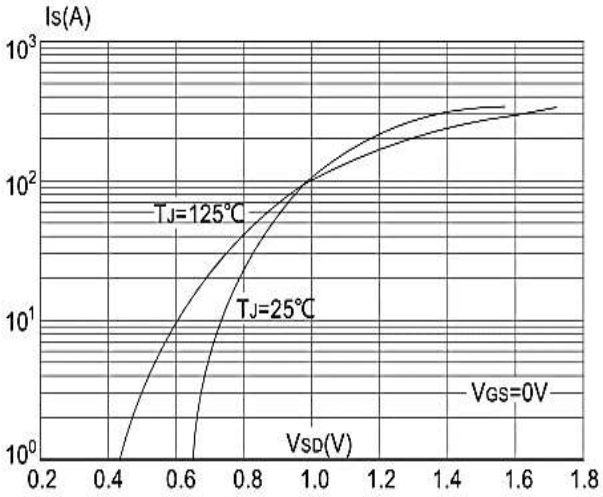


Figure 4: Body Diode Characteristics

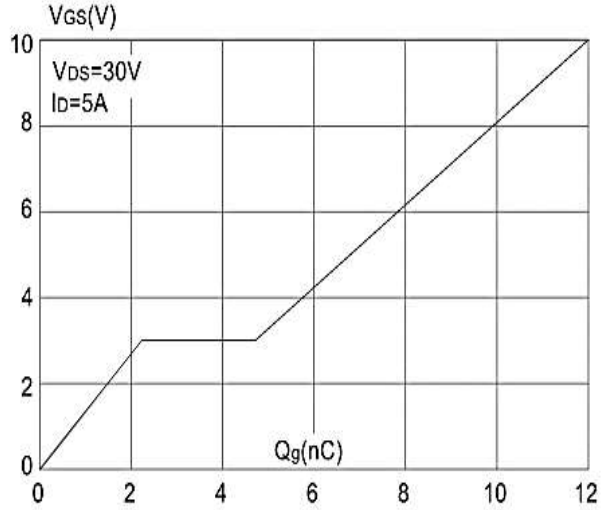


Figure 5: Gate Charge Characteristics

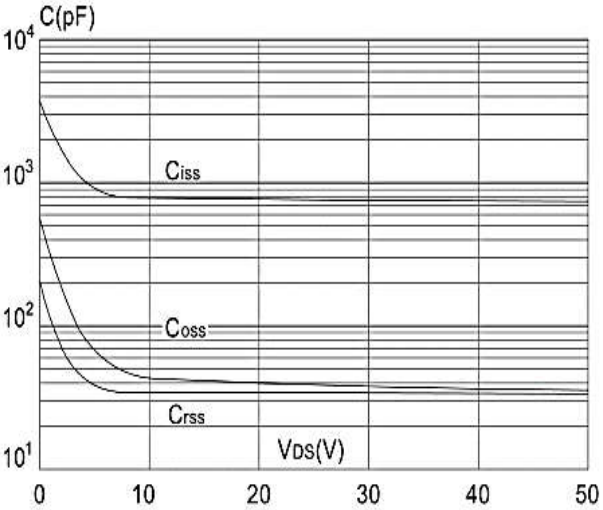


Figure 6: Capacitance Characteristics

Ratings and Characteristic Curves

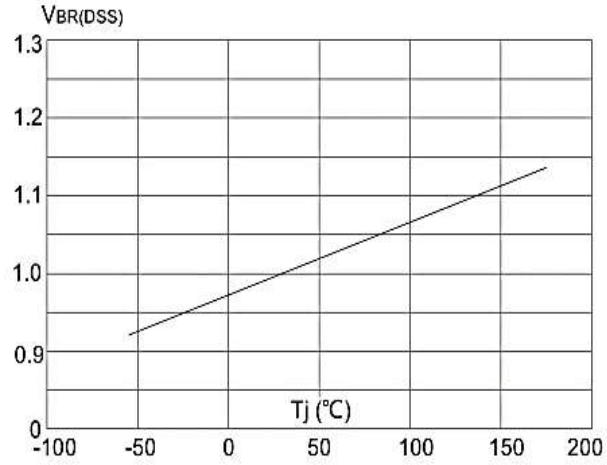


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

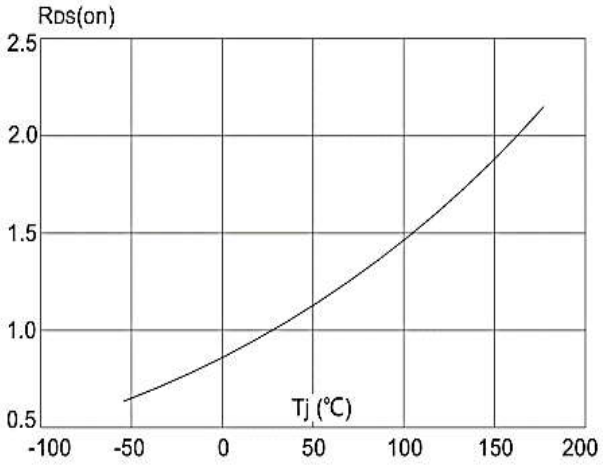


Figure 8: Normalized on Resistance vs. Junction Temperature

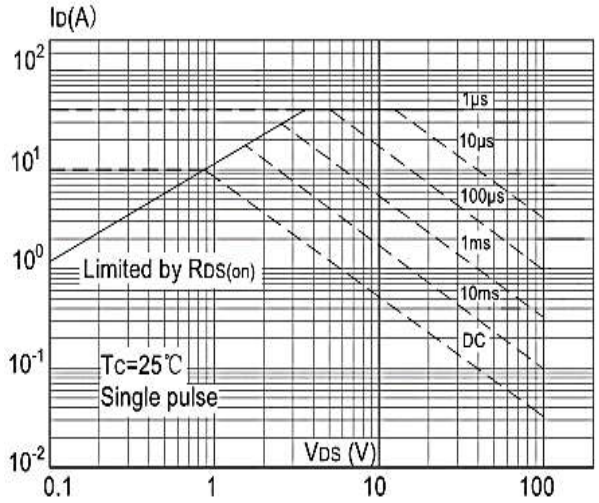


Figure 9: Maximum Safe Operating Area

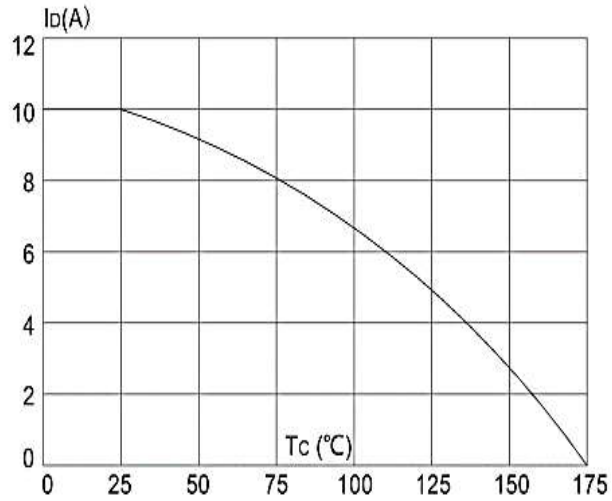


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

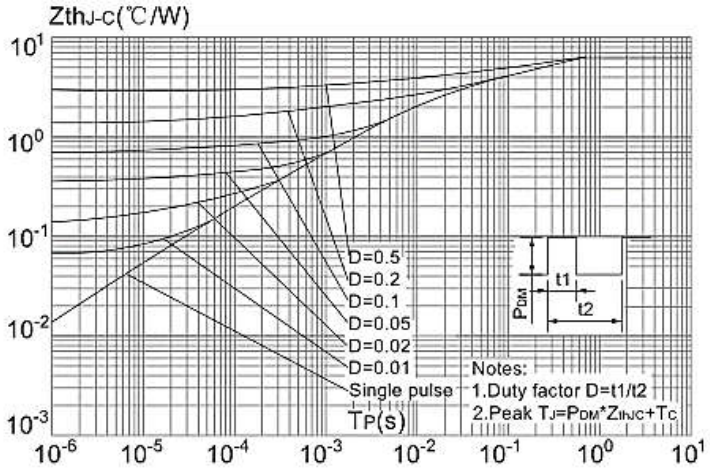


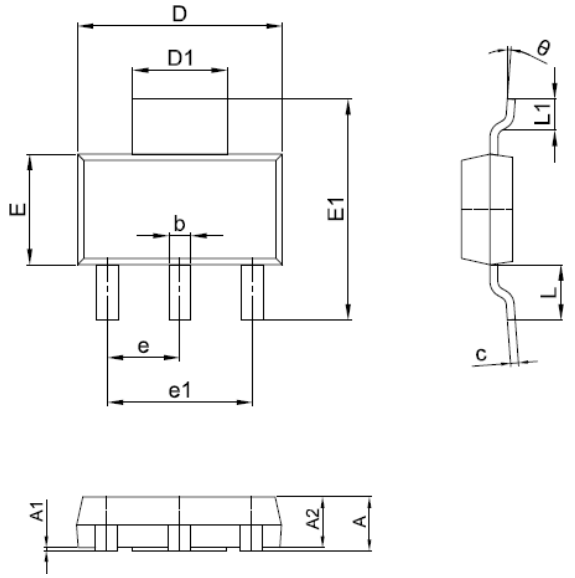
Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Case

Ordering information

Package	Packing Description	Base Quantity	Packing Quantity
SOT-223	Tape/Reel,7”reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton
	Tape/Reel,13”reel	2500pcs/Reel	5000PCS/Box 30000PCS/Carton

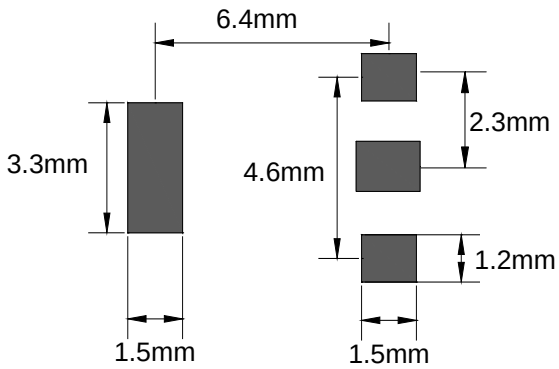
Package Dimensions

SOT-223



Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.50	1.80	0.059	0.071
A1	0.00	0.10	0.000	0.004
A2	1.50	1.70	0.059	0.067
b	0.65	0.75	0.026	0.030
c	0.20	0.30	0.008	0.012
D	6.40	6.60	0.252	0.260
D1	2.90	3.10	0.114	0.122
E	3.30	3.70	0.130	0.146
E1	6.85	7.15	0.270	0.281
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	1.65	1.85	0.065	0.073
L1	0.90	1.15	0.035	0.045

The recommended mounting pad size



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