



YEA SHIN TECHNOLOGY CO., LTD

YS2312

N-Channel Enhancement MOSFET

$V_{DS} = 20V$, $I_D = 5A$



DESCRIPTION

The YS2312 provide the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness. The SOT-23 package is universally preferred for all commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

FEATURES

- Lower Gate Charge
- Simple Drive Requirement
- Fast Switching Characteristic

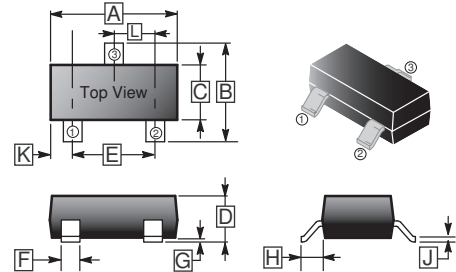
MARKING

S12

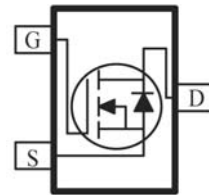
PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch

SOT-23



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	0.01	0.18
B	2.10	2.65	H	0.5 Typ.	
C	1.20	1.40	J	0.08	0.20
D	0.89	1.17	K	0.6 REF.	
E	1.78	2.04	L	0.95 BSC.	
F	0.30	0.50			



Top View

ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	± 8	V
Continuous Drain Current ¹		I_D	5	A
Pulsed Drain Current ³		I_{DM}	20	A
Maximum Power Dissipation ¹	$T_A=25^\circ\text{C}$	P_D	1.4	W
	$T_A=70^\circ\text{C}$		0.9	
Thermal Resistance Junction-Ambient		$R_{\theta JA}$ ¹	$t \leq 10s$, 89	$^\circ\text{C} / \text{W}$
		$R_{\theta JA}$ ²	357	
Operating Junction & Storage Temperature		T_J, T_{STG}	150, -55~150	$^\circ\text{C}$

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ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Teat Conditions
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	20	-	-	V	V _{GS} =0, I _D =250μA
Gate-Threshold Voltage	V _{GS(th)}	0.45	-	1	V	V _{DS} =V _{GS} , I _D =250μA
Gate-Source Leakage Current	I _{GSS}	-	-	±100	nA	V _{GS} = ±8V, V _{DS} =0
Drain-Source Leakage Current	I _{DSS}	-	-	1	μA	V _{DS} =20V, V _{GS} =0
Forward Transfer conductance	g _{fs}	6	-	-	S	V _{DS} =10V, I _D =5A
Diode Forward Voltage ⁴	V _{SD}	-	0.75	1.2	V	I _S =4A, V _{GS} =0
Static Drain-Source On-Resistance ⁴	R _{DS(ON)}	-	-	32	mΩ	V _{GS} =4.5V, I _D =5A
		-	-	36		V _{GS} =2.5V, I _D =4.7A
		-	-	42		V _{GS} =1.8V, I _D =4.3A
Switching Parameters						
Input Capacitance	C _{iSS}	-	865	-	pF	V _{GS} =0 V _{DS} =10V f =1.0MHz
Output Capacitance	C _{oSS}	-	105	-		
Reverse Transfer Capacitance	C _{rSS}	-	55	-		
Turn-on Delay Time	T _{d(on)}	-	10	-	nS	V _{DD} =10V V _{GEN} =5V R _G =1Ω R _L =2.2Ω I _D =4A
Rise Time	T _r	-	20	-		
Turn-off Delay Time	T _{d(off)}	-	32	-		
Fall Time	T _f	-	12	-		
Gate Resistance	R _g	0.5	-	4.8	Ω	f =1.0MHz

Notes:

1. The data tested by surface mounted on a 1 inch² FR4 board with 2OZ copper.
2. Surface mounted on min. copper pad.
3. Pulse width limited by Max. junction temperature.
4. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤ 2%.

YS2312

CHARACTERISTIC CURVES

