



# N-Channel Enhancement MOSFET



VDS = 30V, ID = 5.8A

## DESCRIPTION

YS3404 uses advanced trench technology to provide excellent  $R_{DS(ON)}$  and low gate charge. This device is suitable for the use as a load switch or in PWM applications. The source leads are separated to allow a Kelvin connection to the source, which may be used to bypass the source inductance.

## FEATURES

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

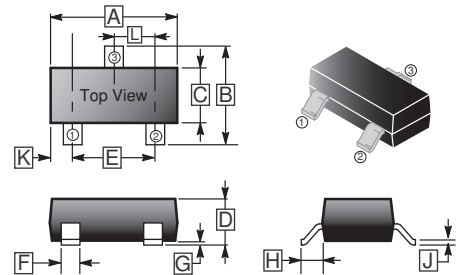
## MARKING

R4

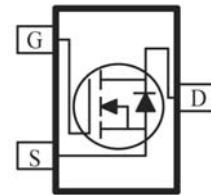
## PACKAGE INFORMATION

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			



## ABSOLUTE MAXIMUM RATINGS (TA=25°C unless otherwise specified)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V <sub>DS</sub>	30	V
Gate-Source Voltage	V <sub>GS</sub>	±20	V
Continuous Drain Current (t ≤ 10s)	I <sub>D</sub>	5.8	A
Pulsed Drain Current <sup>1</sup>	I <sub>DM</sub>	30	A
Thermal Resistance from Junction to Ambient	R <sub>θJA</sub>	357	°C / W
Operating Junction and Storage Temperature	T <sub>J</sub> , T <sub>STG</sub>	150, -55~150	°C

Notes:

1. Repetitive rating : Pulse width is limited by the maximum junction temperature.

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## ELECTRICAL CHARACTERISTICS (T<sub>J</sub>=25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	30	-	-	V	V <sub>GS</sub> =0, I <sub>D</sub> =250μA
Drain-Source Leakage Current	I <sub>DSS</sub>	-	-	1	μA	V <sub>DS</sub> =30V, V <sub>GS</sub> =0
Gate-Source Leakage Current	I <sub>GSS</sub>	-	-	±100	nA	V <sub>GS</sub> = ±20V, V <sub>DS</sub> =0
Gate-Threshold Voltage	V <sub>GS(th)</sub>	1	1.4	3	V	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA
Static Drain-Source On-Resistance <sup>1</sup>	R <sub>DS(on)</sub>	-	23	30	mΩ	V <sub>DS</sub> =10V, I <sub>D</sub> =5.8A
		-	31	42		V <sub>GS</sub> =4.5V, I <sub>D</sub> =4.8A
Forward Transconductance <sup>1</sup>	g <sub>fs</sub>	5	-	-	S	V <sub>DS</sub> =5V, I <sub>D</sub> =5.8A
Diode Forward Voltage	V <sub>SD</sub>	-	-	1	V	I <sub>S</sub> =1A
<b>Dynamic Characteristics</b>						
Input Capacitance	C <sub>iss</sub>	-	820	-	pF	V <sub>GS</sub> =0 V <sub>DS</sub> =15V f=1.0MHz
Output Capacitance	C <sub>oss</sub>	-	118	-		
Reverse Transfer Capacitance	C <sub>rss</sub>	-	85	-		
Gate Resistance	R <sub>g</sub>	-	-	1.5	Ω	V <sub>GS</sub> = V <sub>DS</sub> =0, f=1.0MHz
<b>Switching Characteristics</b>						
Turn-on Delay Time	T <sub>d(on)</sub>	-	6.5	-	nS	V <sub>DS</sub> =15V V <sub>GS</sub> =10V R <sub>GEN</sub> =3Ω R <sub>L</sub> =2.6Ω
Rise Time	T <sub>r</sub>	-	3.1	-		
Turn-off Delay Time	T <sub>d(off)</sub>	-	15.1	-		
Fall Time	T <sub>f</sub>	-	2.7	-		

Notes:

1. Pulse Width≤300μs, Duty Cycle ≤ 0.5%.

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## CHARACTERISTIC CURVES

