

## SOT-23-3 Plastic-Encapsulate Transistors

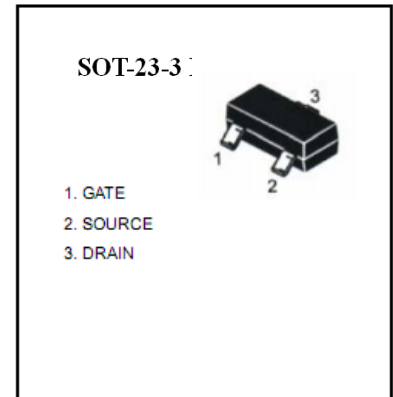
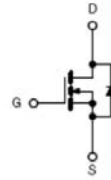
### HX3400X MOSFET(N-Channel)

#### FEATURES

High Power and current handing capability

Lead free product is acquired

Surface Mout Package



NOTE: HX2300X : X It stands for 3.6A

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

Symbol	Parameter	Value	Units
V <sub>DS</sub>	Drain-Source voltage	30	V
V <sub>GS</sub>	Gate-Source voltage	±12	V
I <sub>D</sub>	Drain current	5.8	A
P <sub>D</sub>	Power Dissipation	1.4	W
T <sub>J</sub>	Junction Temperature	-55-150	°C
T <sub>stg</sub>	Storage Temperature	-55-150	°C

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

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =250uA	30			V
Gate-Threshold Voltage	V <sub>th(GS)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> =250 uA	0.7	0.9	1.4	V
Gate-body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±12V			±100	nA
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V			1	uA
Drain-Source On-Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> =2.5V, I <sub>D</sub> =4A			59	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =2.9A			45	mΩ
		V <sub>GS</sub> =10V, I <sub>D</sub> =2.9A			41	mΩ
Forward Trans conductance	g <sub>fs</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =2.9A	10			s
Dynamic Characteristics						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =15V, V <sub>GS</sub> =0V, f=1MHz		623		pF
Output Capacitance	C <sub>oss</sub>			99		
Reverse Transfer Capacitance	C <sub>rss</sub>			77		
Switching Capacitance						
Turn-on Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> =15V, I <sub>D</sub> =2.9A, V <sub>GS</sub> =10V R <sub>GEN</sub> =3Ω		3.3		nS
Turn-on Rise Time	t <sub>r</sub>			4.8		nS
Turn-off Delay Time	t <sub>d(off)</sub>			26		nS
Turn-off Fall Time	t <sub>f</sub>			4		nS
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =15V, I <sub>D</sub> =5.8A, V <sub>GS</sub> =4.5V,		9.5		nC
Gate-Source Charge	Q <sub>gs</sub>			1.5		nC
Gate-Drain Charge	Q <sub>gd</sub>			3		nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =2.9A		0.75	1.2	V
Diode Forward Current	I <sub>S</sub>				2.9	A

# Typical Characteristics

# HX3400X

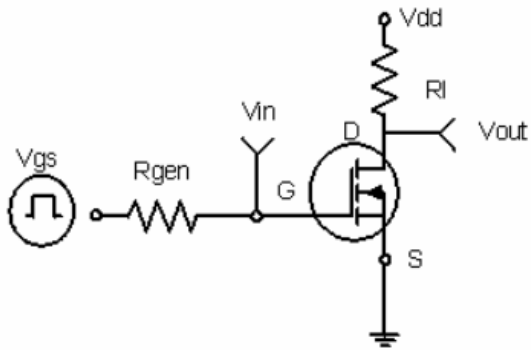


Figure 1: Switching Test Circuit

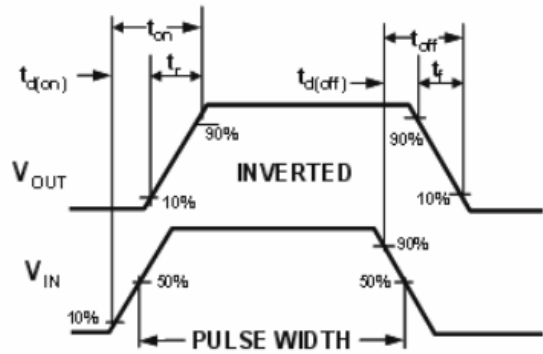


Figure 2: Switching Waveforms