JESTEK

JST3400

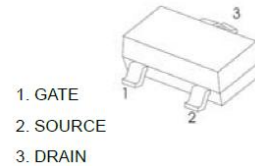## FEATURES

RDS(ON)$\leq$ 33mΩ @VGS=10V

RDS(ON)$\leq$ 39mΩ @VGS=4.5V

RDS(ON)$\leq$ 60mΩ @VGS=2.5V

APPLICATIONS

Load/Power Switching

Interfacing Switching

SOT-23

1. GATE
2. SOURCE
3. DRAIN

MARKING
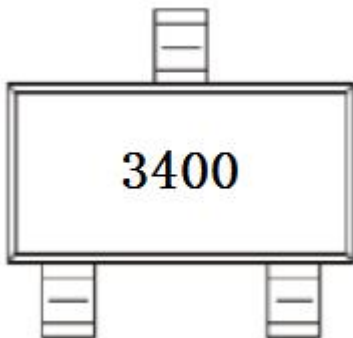
N-CHANNEL MOSFET
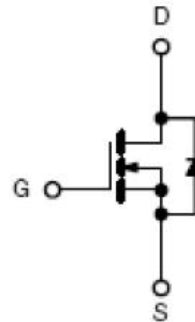
Maximum ratings (T$_a$=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V$_{DS}$	30	V
Gate-Source Voltage	V$_{GS}$	±12	
Continuous Drain Current	I$_D$	5.8	A
Pulsed Drain Current	I$_{DM}$	30	
Maximum Power Dissipation	P$_D$	0.35	W
Thermal Resistance from Junction to Ambient(t ≤5s)	R$_{\theta JA}$	357	℃/W
Junction Temperature	T$_J$	150	℃
Storage Temperature	T$_{stg}$	-55 ~+150	

JST3400

MOSFET ELECTRICAL CHARACTERISTICS T$_a$=25 ℃ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static						
Drain-source breakdown voltage	V$_{(BR)DSS}$	V$_{GS}$ = 0V, I$_D$ =250µA	30	31.5		V
Gate-source threshold voltage	V$_{GS(th)}$	V$_{DS}$ =V$_{GS}$, I$_D$ =250µA	0.7	1	1.4	
Gate-source leakage	I$_{GSS}$	V$_{DS}$ =0V, V$_{GS}$ =±12V			±100	nA
Zero gate voltage drain current	I$_{DSS}$	V$_{DS}$ =30V, V$_{GS}$ =0V			1	µA
Drain-source on-state resistance [a]	R$_{DS(on)}$	V$_{GS}$ =10V, I$_D$ =5A		21	33	mΩ
		V$_{GS}$ =4.5V, I$_D$ =4A		25	39	
		V$_{GS}$ =2.5V, I$_D$ =3A		36	60	
Body diode voltage	V$_{SD}$	I$_S$=1A		0.8	1	V
Dynamic[b]						
Input capacitance	C$_{iss}$	V$_{DS}$ =15V,V$_{GS}$ =0V,f =1MHz			1155	pF
Output capacitance	C$_{oss}$			108		
Reverse transfer capacitance	C$_{rss}$			84		
Total gate charge	Q$_g$	V$_{DS}$ =15V,V$_{GS}$ =4.5V,I$_D$ =5.8A		10		nC
Gate-source charge	Q$_{gs}$			1.6		
Gate-drain charge	Q$_{gd}$			3.1		
Turn-on delay time	t$_{d(on)}$	V$_{DD}$=15V,R$_L$=2.7Ω, V$_{GS}$=10V,R$_{GEN}$=3Ω			5	nS
Rise time	t$_r$				7	
Turn-off delay time	t$_{d(off)}$				40	
Fall time	t$_f$				6	

Notes :

a. Pulse Test : Pulse Width < 300µs, Duty Cycle ≤2%.

b. Guaranteed by design, not subject to production testing.
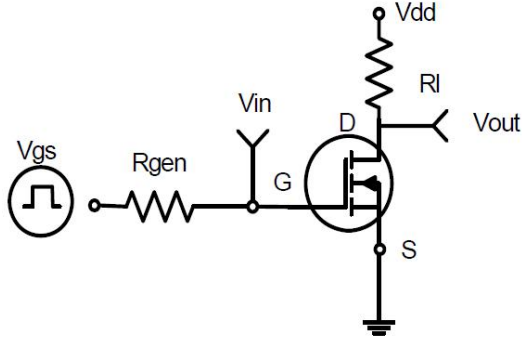
N-Channel 30V (D-S) MOSFET Typical Characteristics
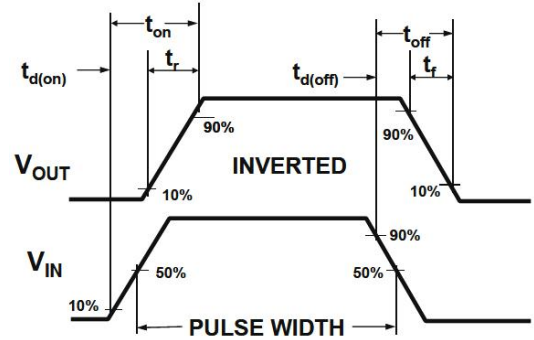
Figure 1:Switching Test Circuit
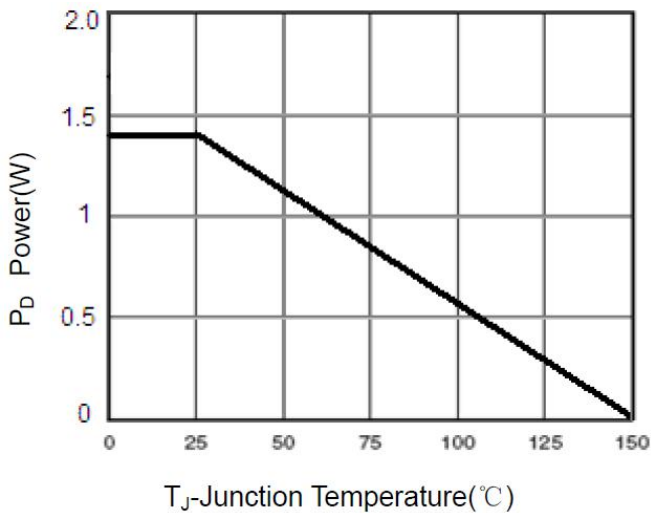
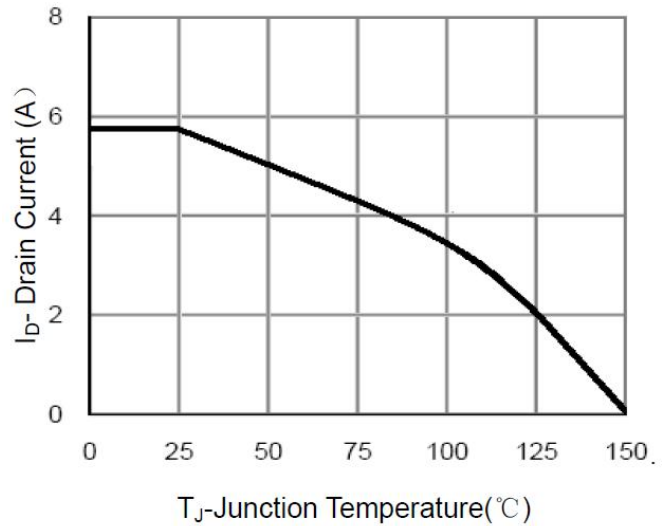**Figure 2:Switching Waveforms**

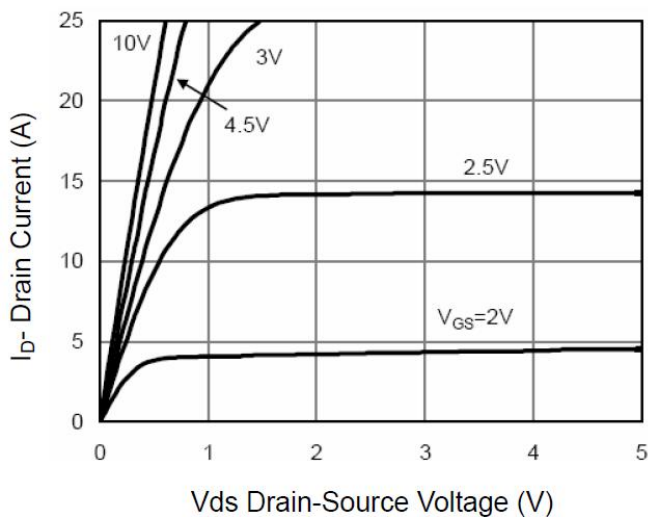**Figure 3 Power Dissipation**

Figure 4 Drain Current

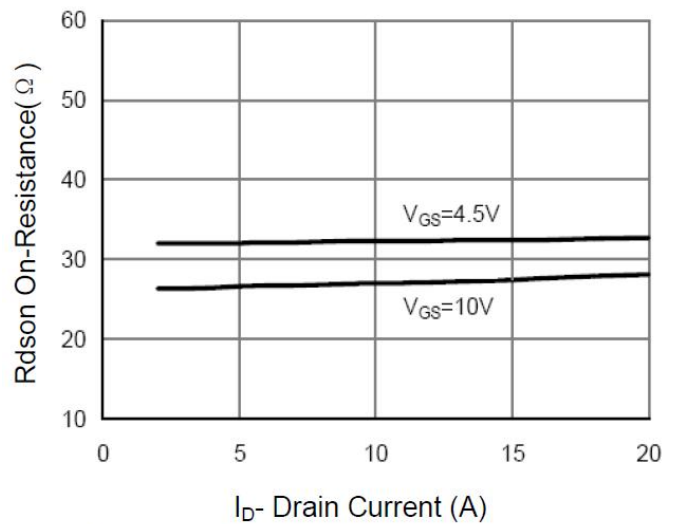**Figure 5 Output Characteristics**

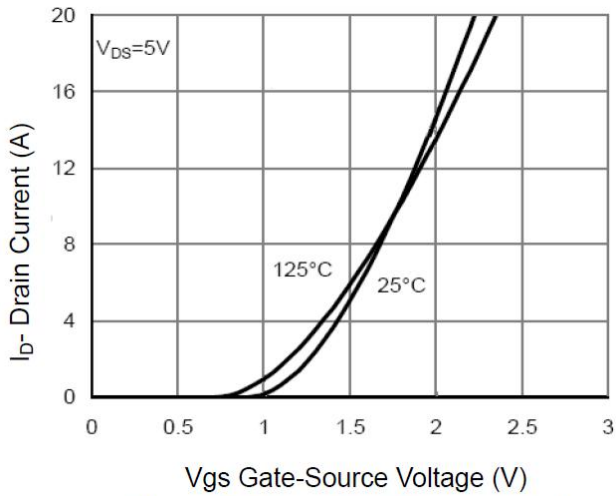**Figure 6 Drain-Source On-Resistance**

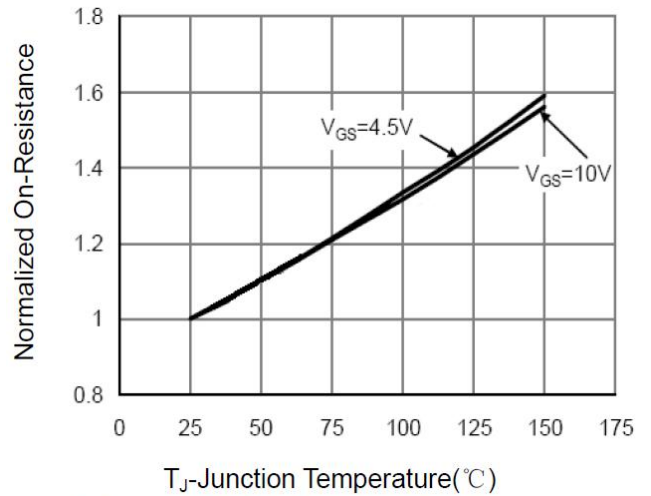**Figure 7 Transfer Characteristics**
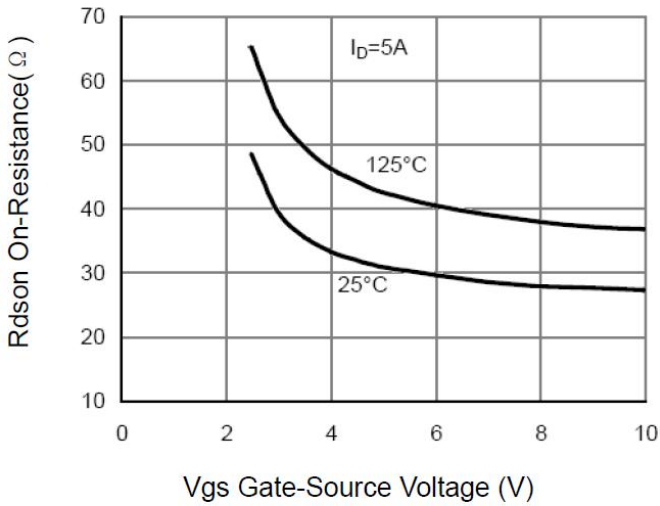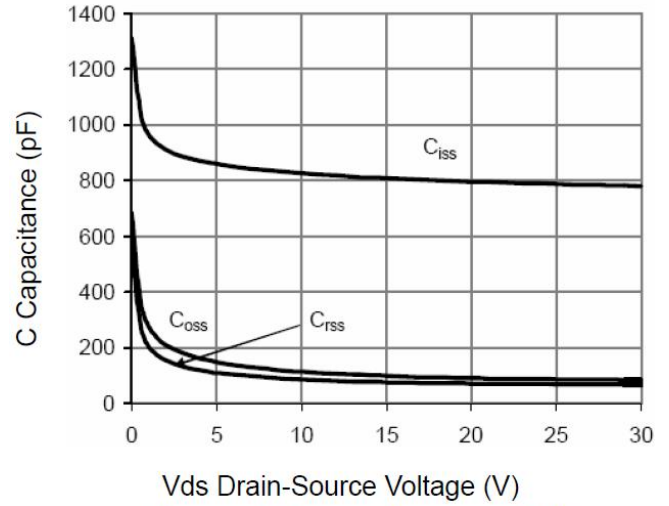
Figure 8 Drain-Source On-Resistance

Figure 9 Rdson vs Vgs

Figure 10 Capacitance vs Vds
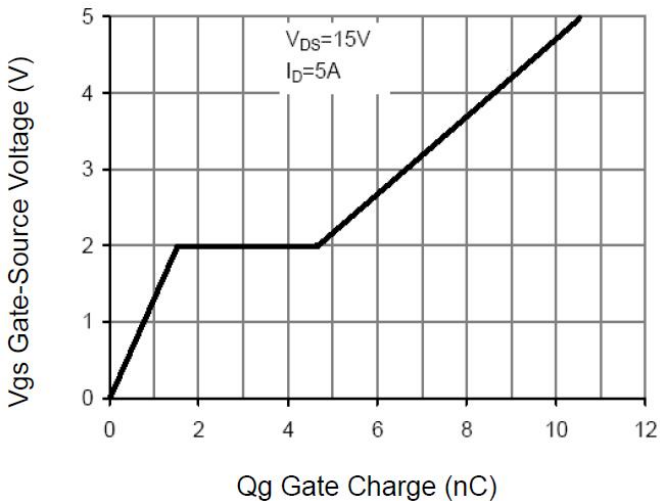
Figure 11 Gate Charge

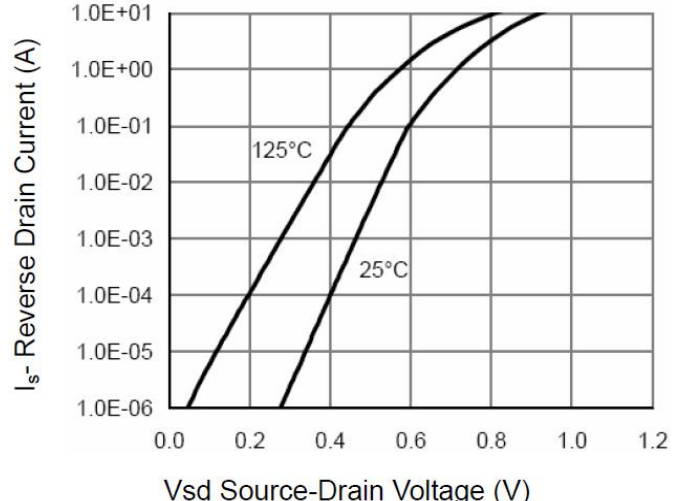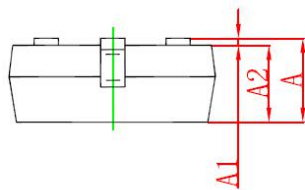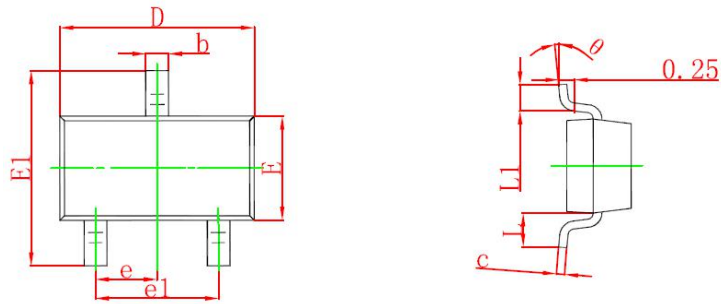**Figure 12 Source- Drain Diode Forward**

SOT-23 package

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout
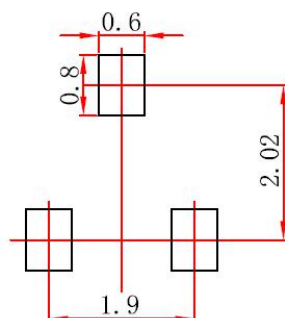
Note:
1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05mm.
3. The pad layout is for reference purposes only.

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