KY3404

30V N-Channel Mosfet

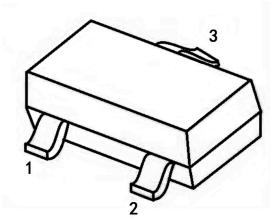
FEATURES

- $R_{DS(ON)}$ ≤ 25mΩ (18mΩ Typ.) @V_{GS}=10V
- $R_{DS(ON)}$ ≤ 40mΩ (28mΩ Typ.) @V_{GS}=4.5V

APPLICATIONS

- PWM Applications
- Load Switch
- Power Management

SOT-23

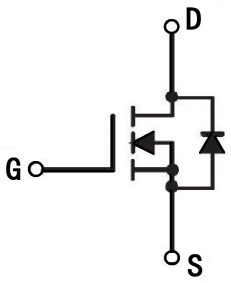


1. GATE
2. SOURCE
3. DRAIN

MARKING

3404:Device Code

N-CHANNEL MOSFET



MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Symbol	Parameter		Max.	Units
V_{DSS}	Drain-Source Voltage		30	V
V_{GSS}	Gate-Source Voltage		±20	V
I_D	Continuous Drain Current	T_a = 25℃	5.8	A
		T_a = 100℃	4	
I_{DM}	Pulsed Drain Current note1		30	A
P_D	Power Dissipation	T_a= 25℃	1.5	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient		85	℃/W
T_J, T_{STG}	Operating and Storage Temperature Range		-55 to +150	℃

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MOSFET ELECTRICAL CHARACTERISTICS Ta=25 °C unless otherwise specified

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS} = 0V,I_D = 250μA	30	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 30V, V_{GS} = 0V, T_J = 25℃	-	-	1	μA
I_{GSS}	Gate to Body Leakage Current	V_{GS} = ±20V,V_{DS} = 0V	-	-	±100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} =V_{GS},I_D = 250μA	1.0	1.5	2.5	V
$R_{DS(on)}$	Static Drain-Source On-Resistance note2	V_{GS} =10V, I_D =5A	-	18	25	mΩ
		V_{GS} =4.5V, I_D =4A	-	28	40	
g_{FS}	Forward Transconductance	V_{DS} =5V, I_D =5A	3	5.8	-	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS} =15V, V_{GS} = 0V, f = 1.0MHz	-	560	-	pF
C_{oss}	Output Capacitance		-	125	-	pF
C_{rss}	Reverse Transfer Capacitance		-	90	-	pF
Q_g	Total Gate Charge	V_{DS}=10V, I_D=3.6A, V_{GS}=5V	-	7	-	nC
Q_{gs}	Gate-Source Charge		-	1.5	-	nC
Q_{gd}	Gate-Drain(“Miller”) Charge		-	3	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{GS} = 10V, V_{DS}=15V, R_G =2.5Ω, I_D=5.5A	-	10	-	ns
t_r	Turn-On Rise Time		-	4	-	ns
$t_{d(off)}$	Turn-Off Delay Time		-	27	-	ns
t_f	Turn-Off Fall Time		-	5	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	5.8	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	30	A
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS} = 0V, I_{SD}=1.7A, T_J = 25℃	-	-	1.2	V

Notes: 1. Repetitive Rating: Pulse width limited by maximum junction temperature

2 . Pulse Test: Pulse width ≤ 300μs, Duty Cycle ≤ 2%

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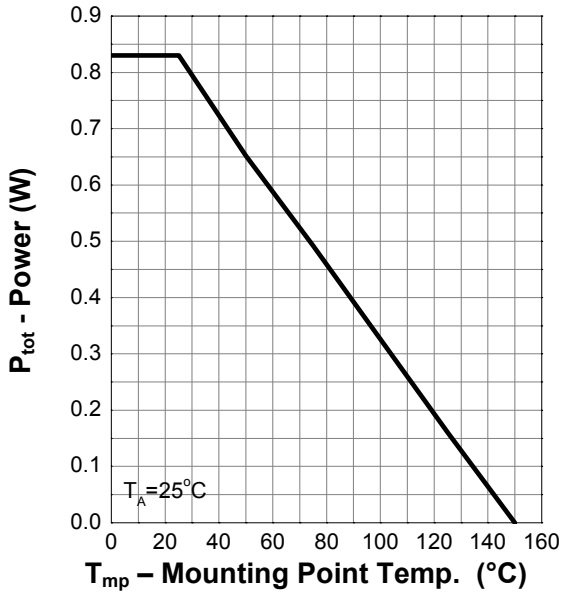
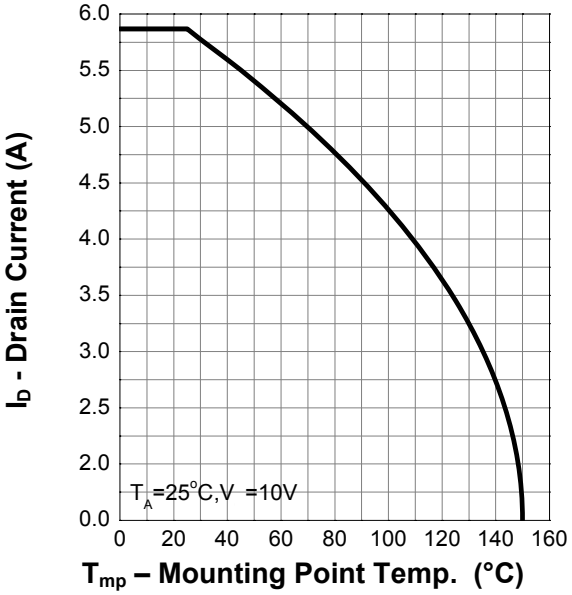
TYPICAL PERFORMANCE CHARACTERISTICS

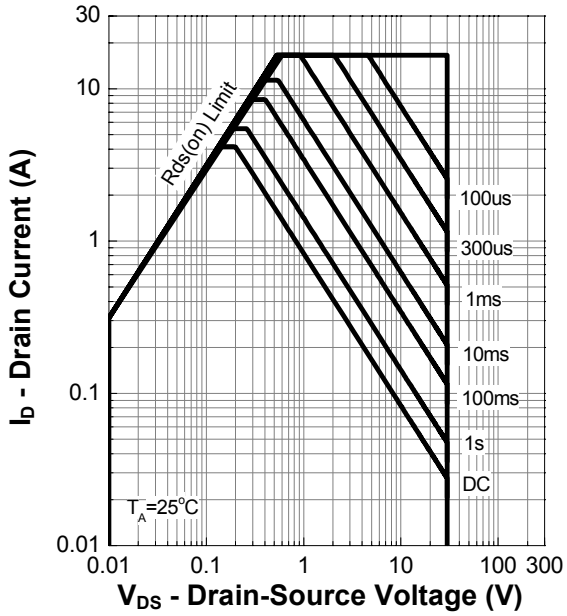
Power Capability



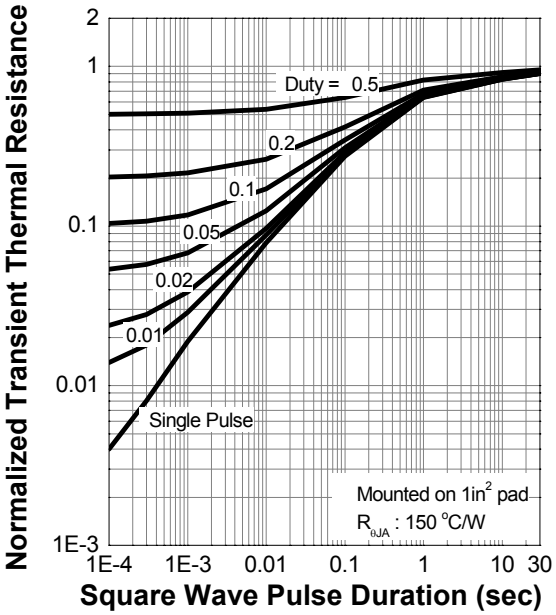
Current Capability



Safe Operation Area



Transient Thermal Impedance



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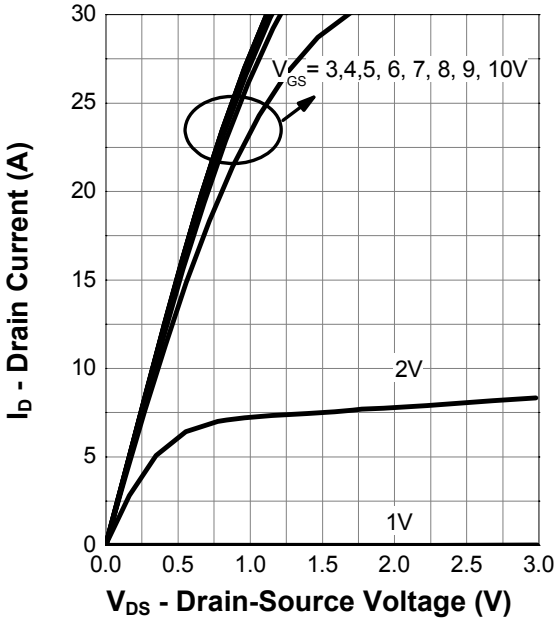
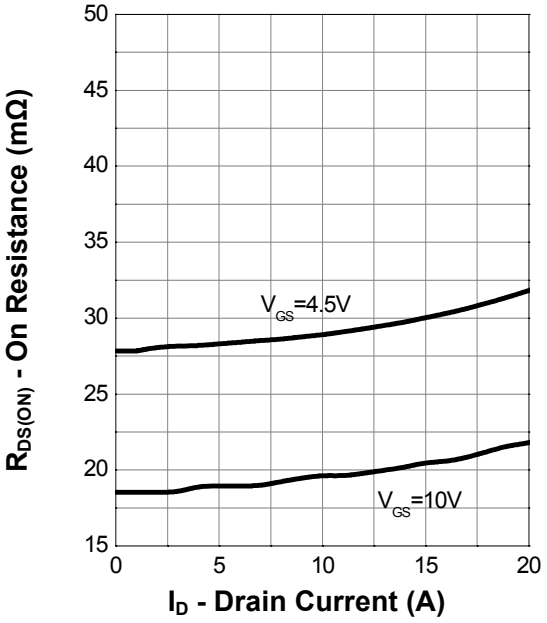
TYPICAL PERFORMANCE CHARACTERISTICS (cont.)

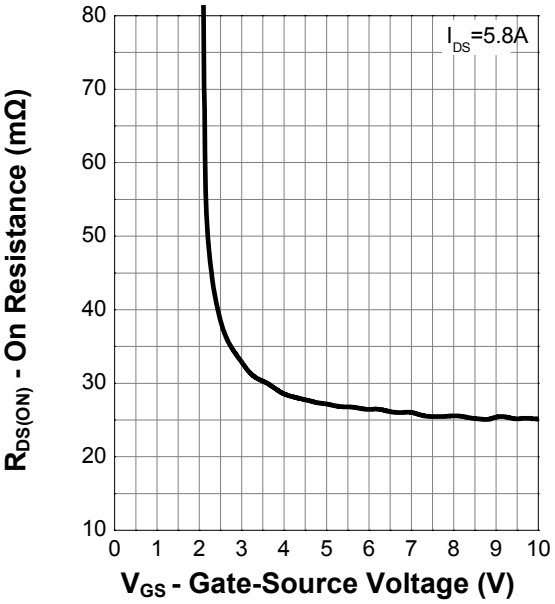
Output Characteristics



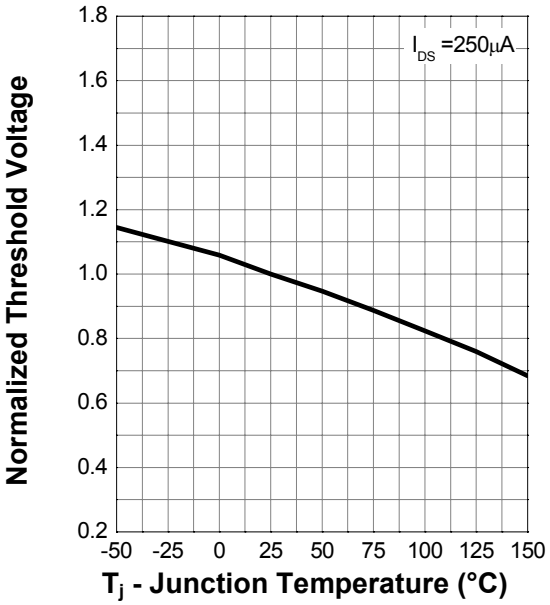
On Resistance



Transfer Characteristics



Normalized Threshold Voltage



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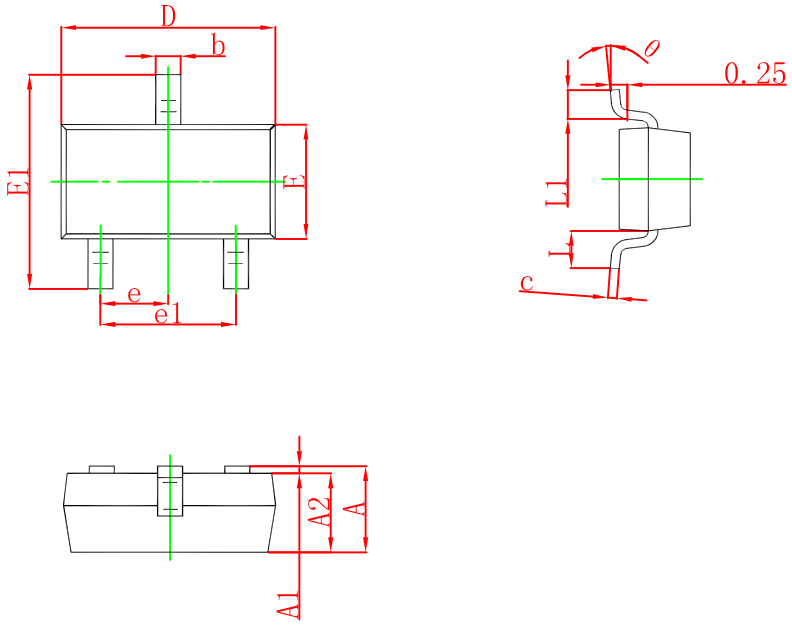
SOT-23 PACKAGE OUTLINE DRAWING



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°

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