迈拓电子
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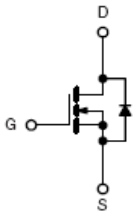
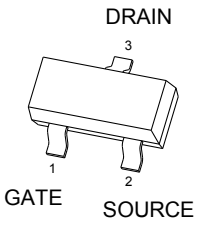
MT3404 N-Channel 30-V(D-S) MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
30V	0.025Ω@10V	5.8A
	0.035Ω@4.5V	





SOT-23

General FEATURE

- TrenchFET Power MOSFET
- Lead free product is acquired
- Surface mount package

APPLICATION

- Load Switch for Portable Devices
- DC/DC Converter

MARKING :3404

Maximum ratings (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	I_D	5.8	A
Pulsed Drain Current*1	I_{DM}	20	
Continuous Source-Drain Diode Current	I_S	1.0	
Maximum Power Dissipation	P_D	1.4	W
Thermal Resistance from Junction to Ambient(t ≤10s)	$R_{\theta JA}$	89	℃/W
Junction Temperature	T_J	-55 ~+150	℃
Storage Temperature	T_{stg}	-55 ~+150	

Note :

*1. Pulse Width ≤ 300μs, Duty cycle ≤2%

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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	-	-	V
Gate-source threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D = 250μA	1.2	1.6	2.4	
Gate-source leakage	I_{GSS}	V_{DS} =0V, V_{GS} =±20V	-	-	±100	nA
Zero gate voltage drain current	I_{DSS}	V_{DS} =24V, V_{GS} =0V	-	-	100	nA
Drain-source on-state resistance [a]	$R_{DS(on)}$	V_{GS} =10V, I_D =5.8A	-	0.023	0.025	Ω
		V_{GS} =4.5V, I_D =5A	-	0.032	0.035	
Forward transconductance [a]	g_{fs}	V_{DS} =5V, I_D =5A	-	15	-	S
Dynamic[b]						
Input capacitance	C_{iss}	V_{DS} =15V,V_{GS} =0V,f =1MHz	-	255	-	pF
Output capacitance	C_{oss}		-	45	-	
Reverse transfer capacitance	C_{rss}		-	35	-	
Total gate charge	Q_g	V_{DS} =15V,V_{GS} =10V ,I_D =5.0A	-	5.2	-	nC
Gate-source charge	Q_{gs}		-	0.85	-	
Gate-drain charge	Q_{gd}		-	1.3	-	
Turn-on delay time	$t_{d(on)}$	V_{DD}=15V,R_L =3Ω V_{GS}=10V ,Rgen =3Ω	-	4.5	-	ns
Rise time	t_r		-	2.5	-	
Turn-off delay time	$t_{d(off)}$		-	14.5	-	
Fall time	t_f		-	3.5	-	
Drain-source body diode characteristics						
Continuous source-drain diode current	I_S	T_C=25℃	-	-	2.5	A
Body diode voltage	V_{SD}	I_S=1.0A	-	0.7	1.0	V

Notes :

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

b.Guaranteed by design, not subject to production testing.

Typical Electrical and Thermal Characteristics

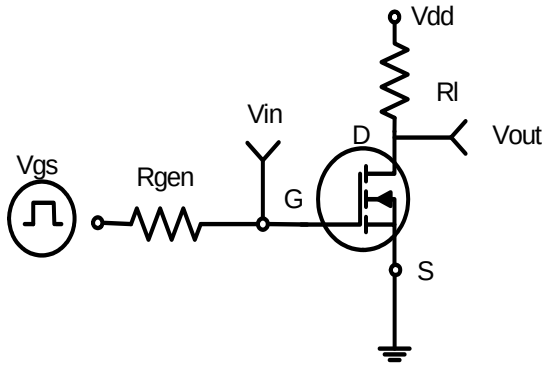

Figure 1:Switching Test Circuit

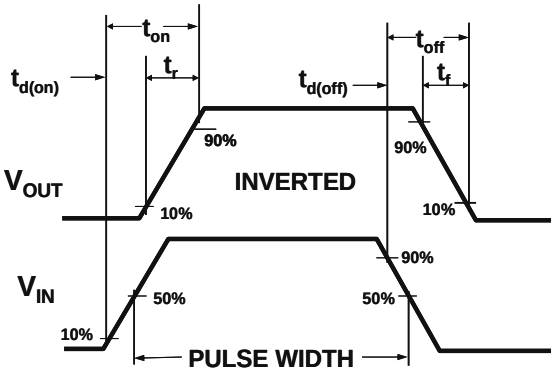

Figure 2:Switching Waveforms

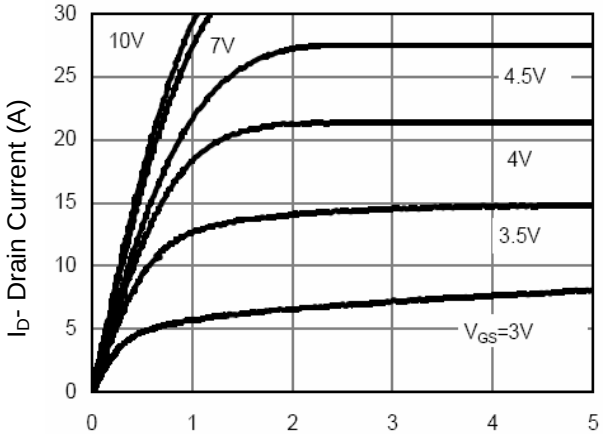

Figure 3 Output Characteristics

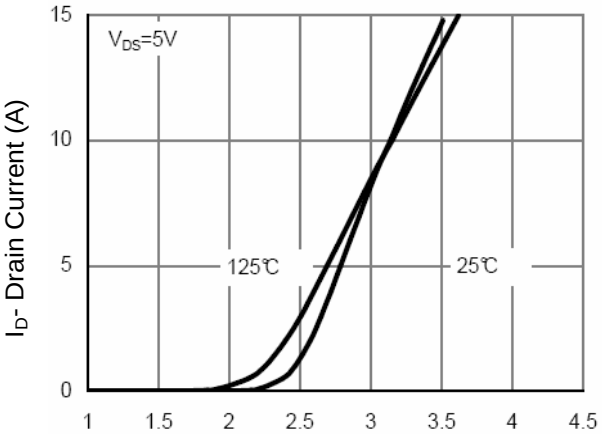

Figure 4 Transfer Characteristics

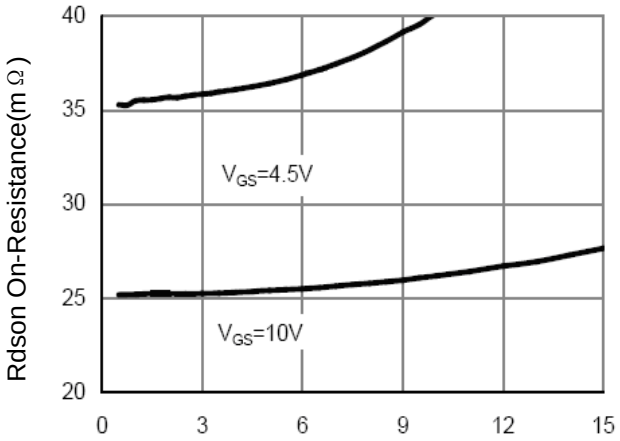

Figure 5 Drain-Source On-Resistance

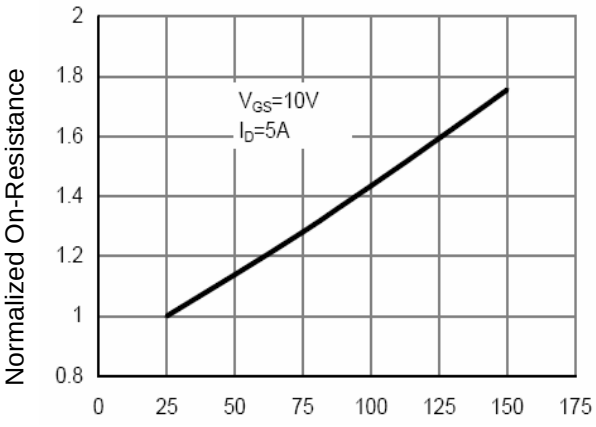

Figure 6 Drain-Source On-Resistance

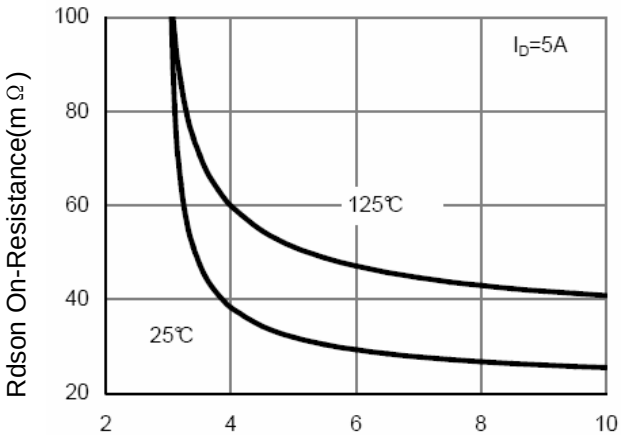

Figure7 Rdson vs Vgs

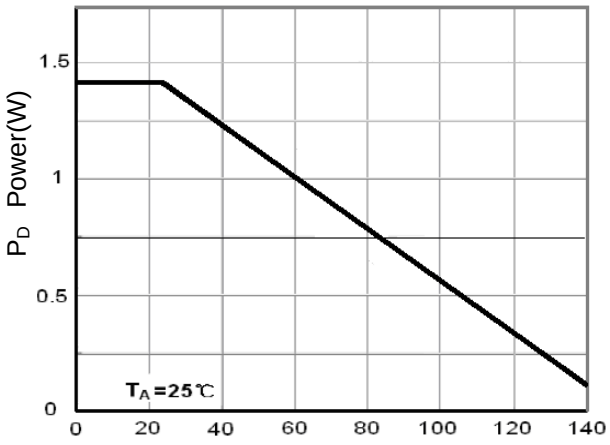

Figure 8 Power Dissipation

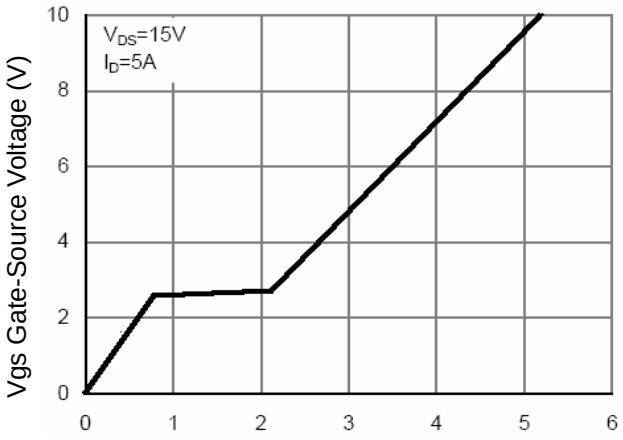

Figure 9 Gate Charge

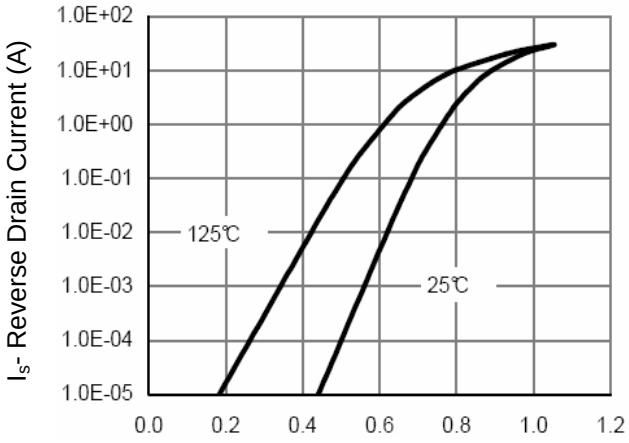

Figure 10 Source- Drain Diode Forward

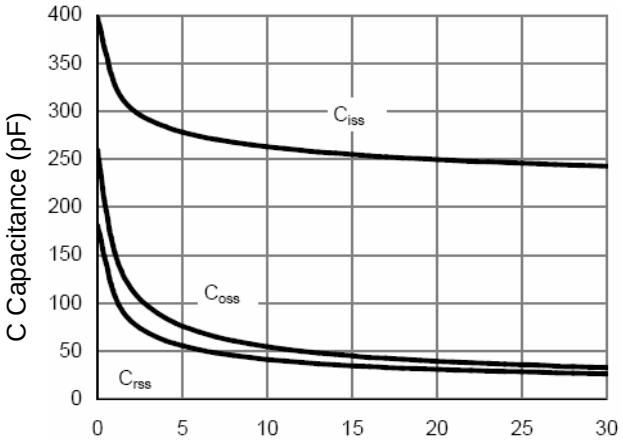

Figure 11 Capacitance vs Vds

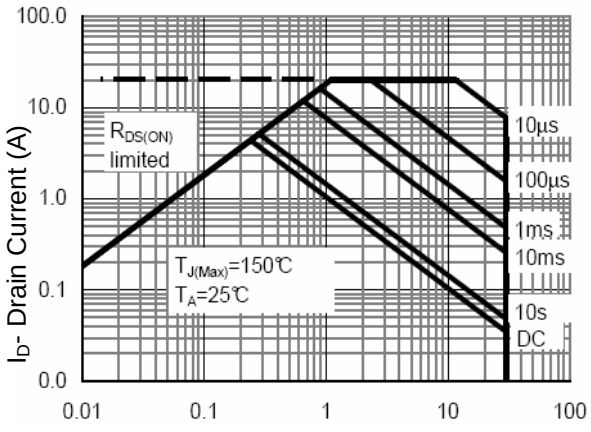

Figure 12 Safe Operation Area

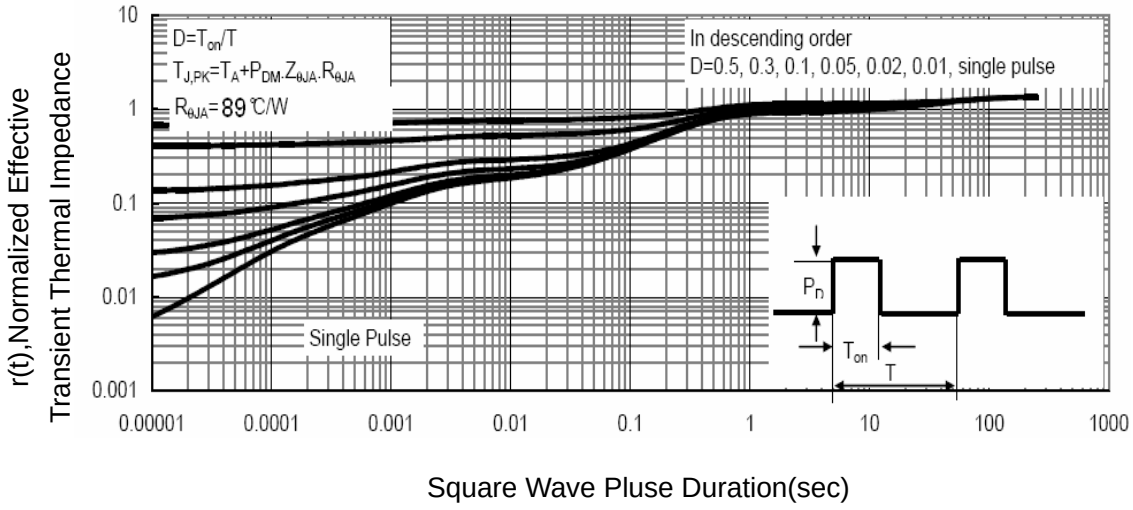

Figure 13 Normalized Maximum Transient Thermal Impedance

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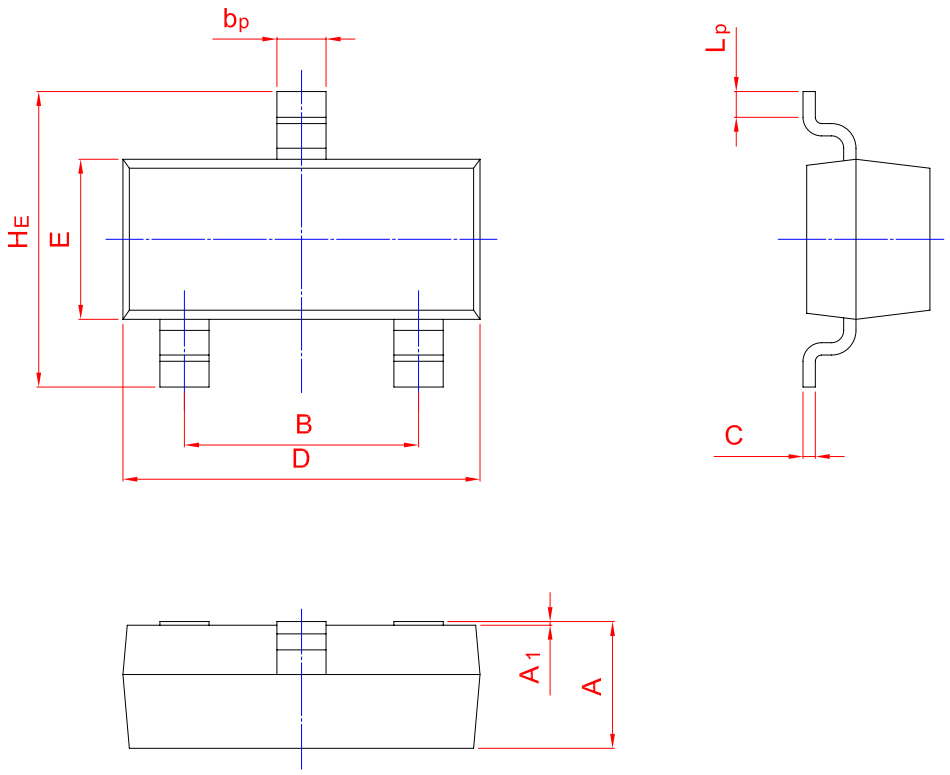
PACKAGE OUTLINE

Plastic surface mounted package; 3 leads **SOT-23**



UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20