

30V N-Channel MOSFET

MOSFET Product Summary

V_{DS}	$R_{DS(ON)}(Typ.)$	I_D
30V	30mΩ @ $V_{GS}=4.5V$	6A
	20mΩ @ $V_{GS}=10V$	

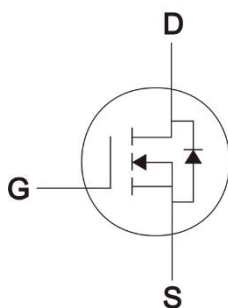
Description

The PM3404AL uses advanced Trench technology and designs to provide excellent $R_{DS(ON)}$ with low gate charge. This device is suitable for use in PWM, load switching and general purpose applications.

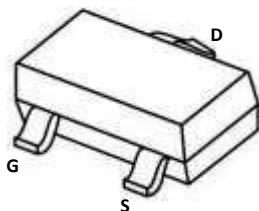
Features

- Surface Mount Package
- N-Channel Switch with Low $R_{DS(ON)}$
- Operated at Low Logic Level Gate Drive

Dimensions and Pin configuration



Circuit diagram



SOT-23

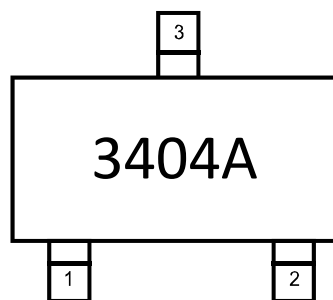
Mechanical Characteristics

- Package: SOT-23
- Case Material: "Green" Molding Compound
- Marking Information: See Below

Applications

- Load Switch for Portable Devices
- DC/DC Converter
- Battery Switch

Marking Information



3404A = Device Marking Code

Ordering Information

Part Number	Shipping	Reel Size
PM3404AL	3000/Tape & Reel	7 inch

Absolute Maximum Ratings ($T_A=25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ^(Note1)	I_D	6	A
Pulsed Drain Current ^(Note2)	I_{DM}	30	A
Power Dissipation	P_D	1.5	W

Thermal Resistance from Junction to Ambient ^(Note3)	$R_{\theta JA}$	83	°C/W
Junction Temperature	T_J	-50~ +150	°C
Storage Temperature	T_{STG}	-50~ +150	°C

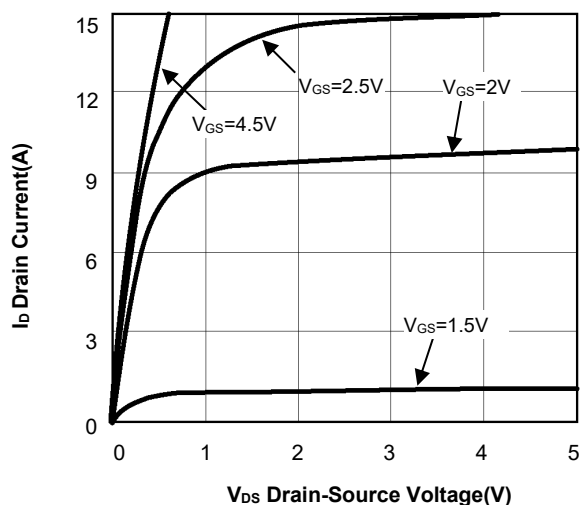
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	30	-	-	V
Zero Gate voltage Drain Current	I_{DSS}	$V_{DS}=30V, V_{GS}=0V$	-	-	1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.5	2.0	V
Drain-to-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=6A$	-	20	32	m Ω
		$V_{GS}=4.5V, I_D=3A$	-	30	45	
Diode Forward Voltage	V_{SD}	$I_S=6A, V_{GS}=0V$	-	0.9	1.2	V
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=15V, V_{GS}=0V,$ $f=1MHz$	-	823	-	pF
Output Capacitance	C_{oss}		-	102	-	
Reverse Transfer Capacitance	C_{rss}		-	80	-	
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=15V, V_{GS}=10V,$ $R_{GEN}=3\Omega, R_L=2.7\Omega$	-	3.8	-	ns
Turn-On Rise Time	t_r		-	5.0	-	
Turn-Off Delay Time	$t_{d(off)}$		-	30	-	
Turn-Off Fall Time	t_f		-	5	-	

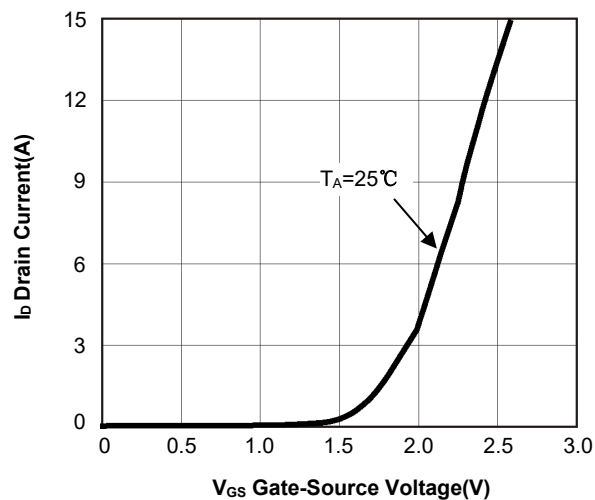
Notes:

1. This current is chip limited, which is calculated based on $R_{\theta JA}$.
2. This current is calculated on single pulse with 10 μs Pulse & Duty Cycle = 1%.
3. The value of $R_{\theta JA}$, which is steady state, is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, with $T_A=25^{\circ}\text{C}$.

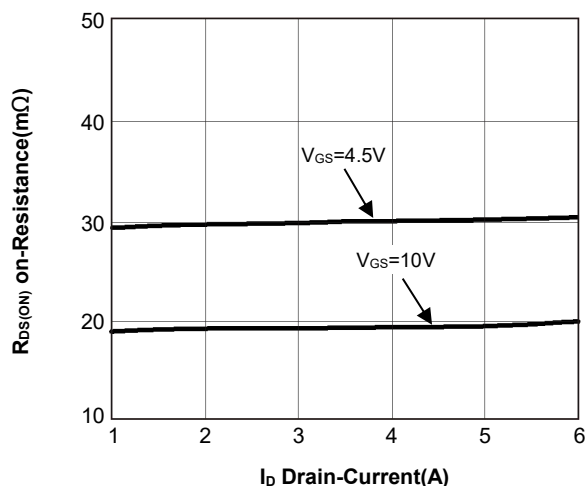
Typical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)



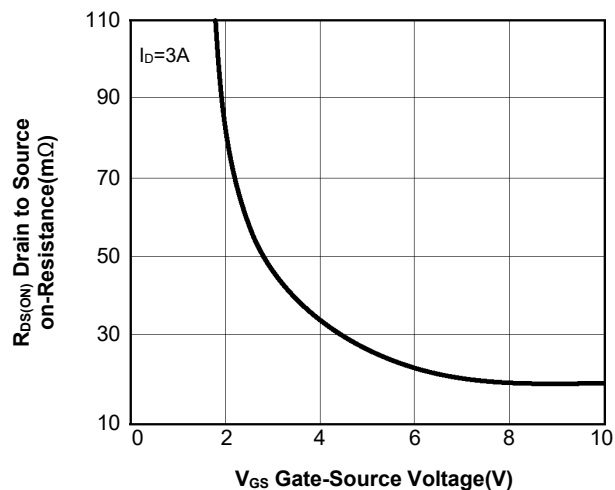
Drain Current vs. Drain-Source Voltage



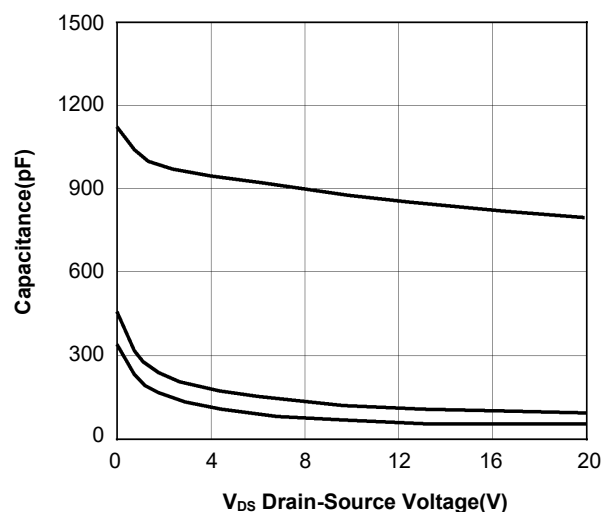
Drain Current vs. Gate-Source Voltage



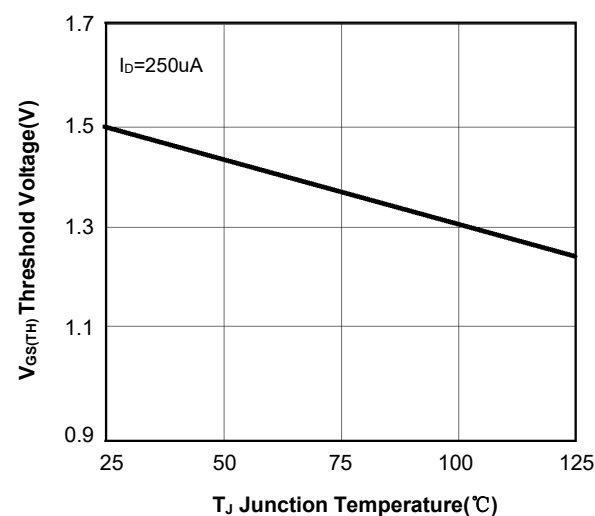
$R_{DS(ON)}$ On-Resistance vs. Drain-Current



On-Resistance vs. Gate-Source Voltage

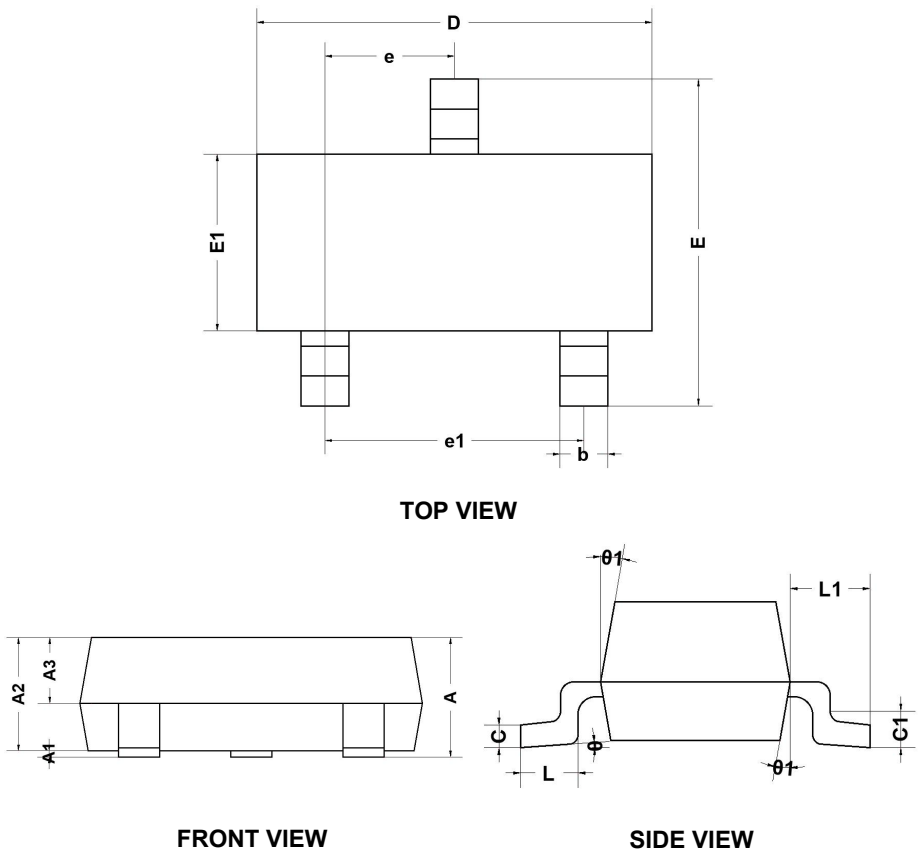


Capacitance vs. Drain-Source Voltage



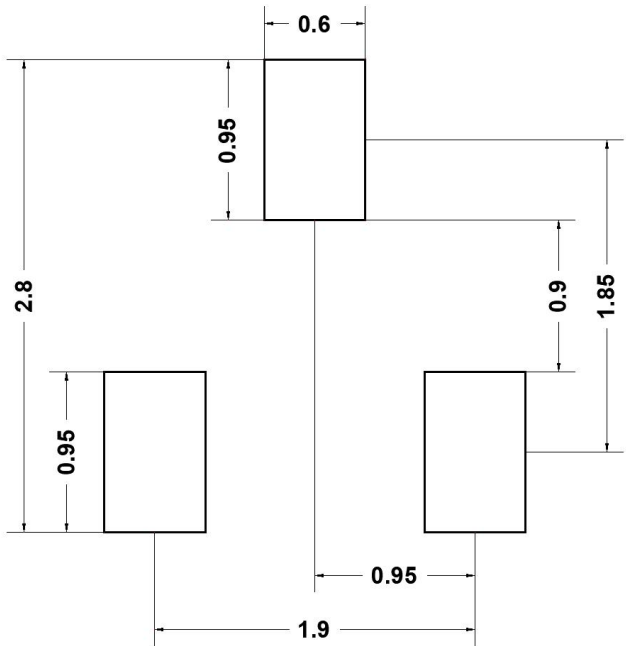
Threshold Voltage vs. Temperature

SOT-23 Package Outline Drawing



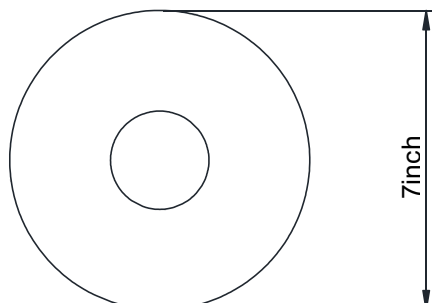
SYM	MILLIMETERS		
	MIN	NOM	MAX
A	0.90	-	1.15
A1	0.00	-	0.10
A2	0.85	-	1.05
A3	0.50	-	0.60
b	0.30	-	0.50
C	0.10	-	0.25
C1	0.25REF		
D	2.80	2.90	3.00
E	2.25	2.40	2.55
E1	1.20	1.30	1.40
e	0.95BSC		
e1	1.80	1.90	2.00
L	0.30	-	0.50
L1	0.55REF		
θ	0°	-	8°
θ1	-	10°	-

Suggested Land Pattern

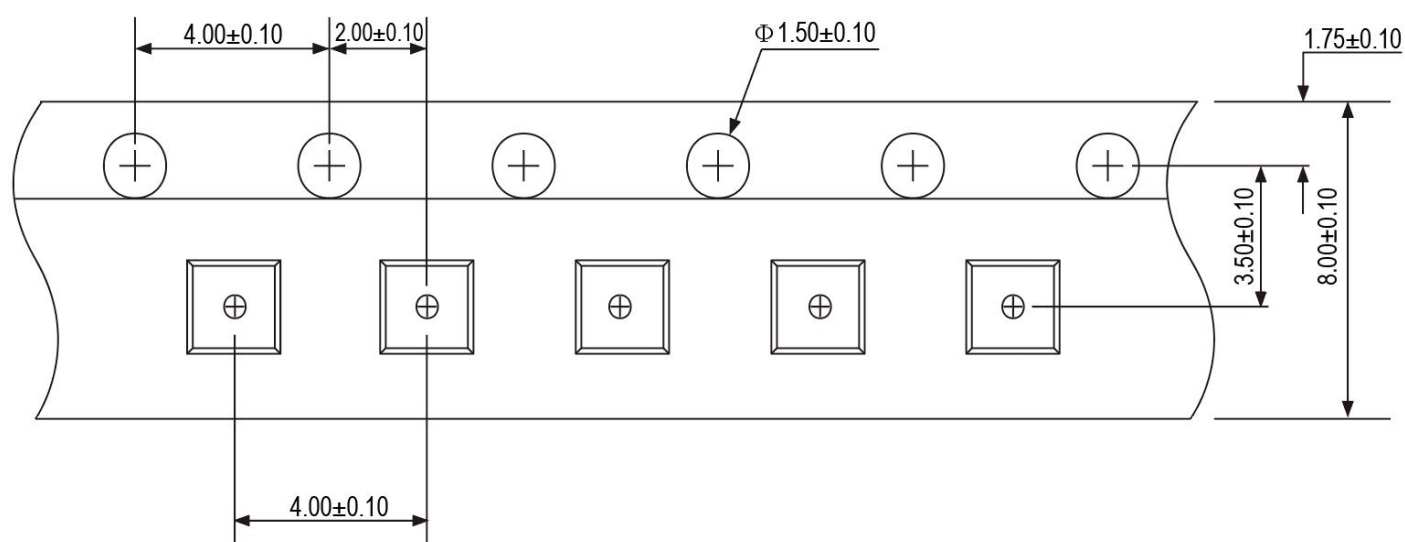


TAPE AND REEL INFORMATION

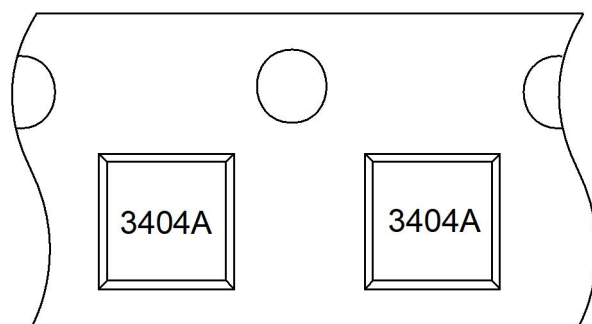
Reel Dimensions



Tape Dimensions



Unit:mm



User Direction of Feed

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