Description

This is 30V 3.2A N-channel mosfet in a SOT-23 plastic package.

Mechanical Characteristics

- SOT-23 Package
- Marking : Making Code
- RoHS Compliant

Features

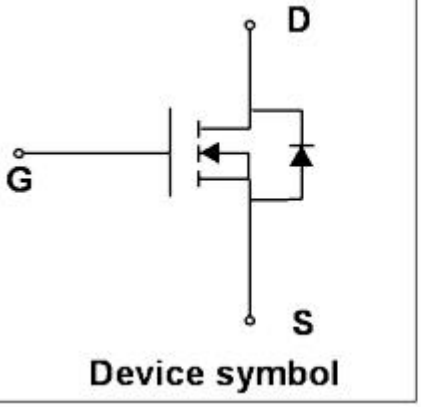
- V_{DS}= 30V,I_D = 3.2A
- RDS(on) < 47mΩ @ VGS = 10V
- RDS(on) < 65mΩ @ VGS = 4.5V

V_{DSS}	$R_{DS(on)(typ)}$	I_D
30 V	33mΩ	3.2 A

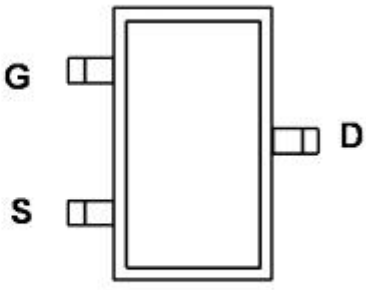
Schematic & PIN Configuration

RoHS compliant

SOT-23



Device symbol



SOT-23(Top View)

Absolute Maximum Rating (TA=25° C unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_A=25°C	I_D	3.2	A
Pulsed Drain Current[1]		I_{DM}	13	A
Power Dissipation	T_A=25°C	P_D	0.75	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	°C

Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance from Junction to Ambient[2]	$R_{\theta JA}$	166	°C/W

Electrical Characteristics (TJ=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	30	-	-	V
Gate leakage Current	I_{GSS}	V_{GS} = ±20V, V_{DS} = 0V	-	-	±100	nA
Drain Cut-off Current	I_{DSS}	V_{DS} = 30V, V_{GS} = 0V	-	-	1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS} = V_{DS}, I_D = 250μA	1.0	1.5	2	V
Drain-Source on-state Resistance[3]	$R_{DS(on)}$	V_{GS} = 10V, I_D = 3.2A	-	33	47	mΩ
		V_{GS} = 4.5V, I_D = 2.8A	-	42	65	
Dynamic Characteristics[4]						
Input Capacitance	C_{iss}	V_{GS} = 0V, V_{DS} = 15V, f = 1 MHz	-	295	-	pF
Output Capacitance	C_{oss}		-	43	-	
Reverse Transfer Capacitance	C_{rss}		-	34	-	
Switching Characteristics[4]						
Total gate charge	Q_g	V_{GS}=10V, V_{DS}=15V, I_D= 3.2A	-	6	-	nC
Gate-source charge	Q_{gs}		-	1.6	-	
Gate-drain charge	Q_{gd}		-	0.6	-	
Turn-on Time	$t_{d(on)}$	V_{GS}= 10V,V_{DD} = 15V, R_G= 3Ω, I_D =3.2A	-	7	-	ns
Rise time	t_r		-	12	-	
Turn-off Time	$t_{d(off)}$		-	14	-	
Fall time	t_f		-	6	-	
Source-Drain Diode Characteristics						
Body Diode Voltage[3]	V_{SD}	I_S=1A, V_{GS} = 0V	-	-	1.2	V
Continuous Source Current	I_S		-	-	3.2	A

Notes:

1. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150°C.
2. The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper, The value in any given application depends on the user's specific board design.
3. Pulse Test: Pulse width≤300μs, duty cycle≤2%.
4. This value is guaranteed by design hence it is not included in the production test.

Electrical Characteristic Curve

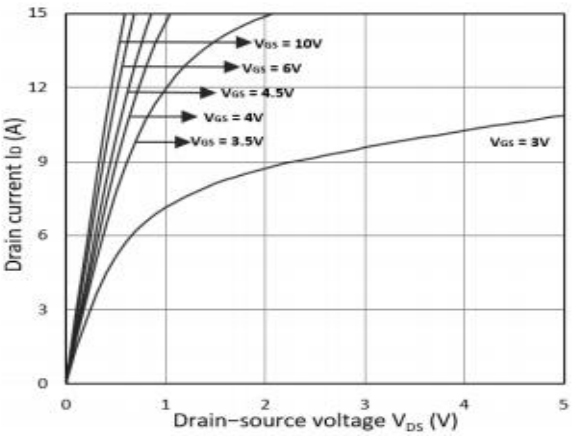


Figure 1. Output Characteristics

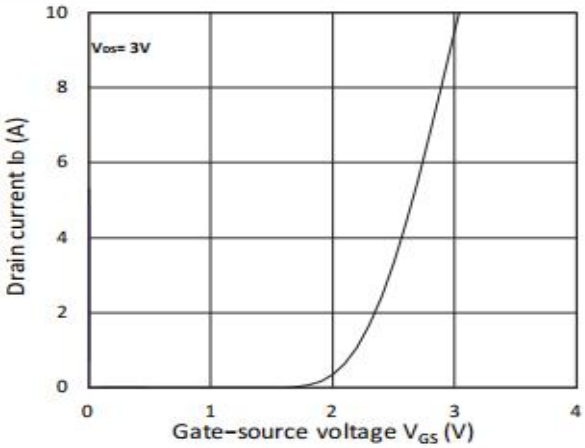


Figure 2. Transfer Characteristics

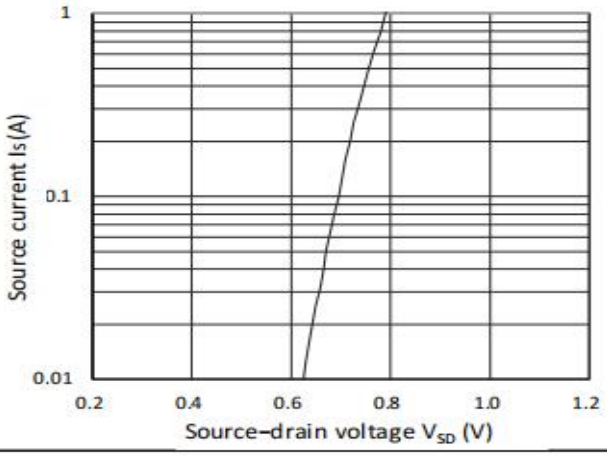


Figure 3. Forward Characteristics of Reverse

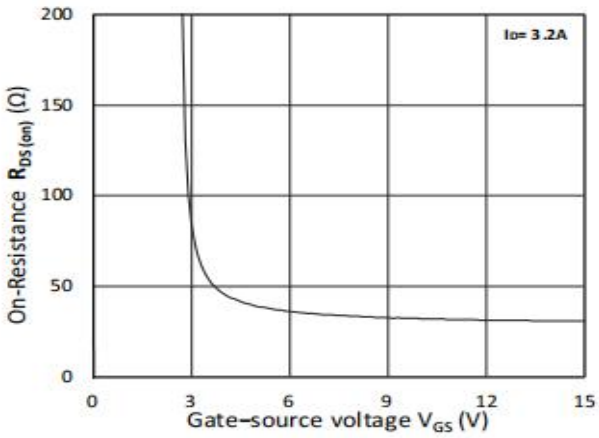


Figure 4. $R_{DS(ON)}$ vs. V_{GS}

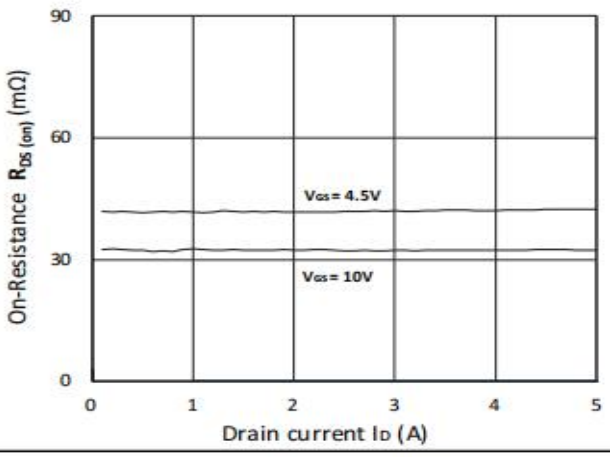


Figure 5. $R_{DS(ON)}$ vs. I_D

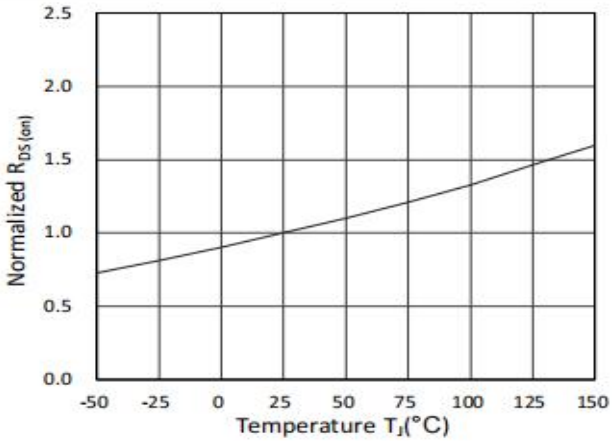


Figure 6. Normalized $R_{DS(on)}$ vs. Temperature

Electrical Characteristic Curve

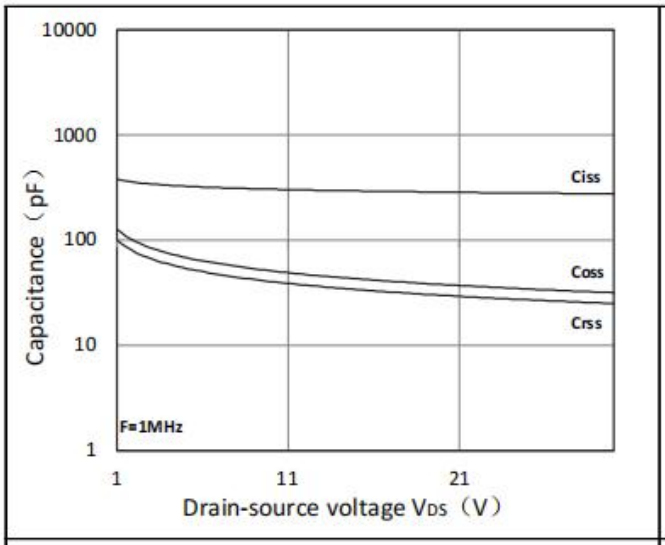


Figure 7. Capacitance Characteristics

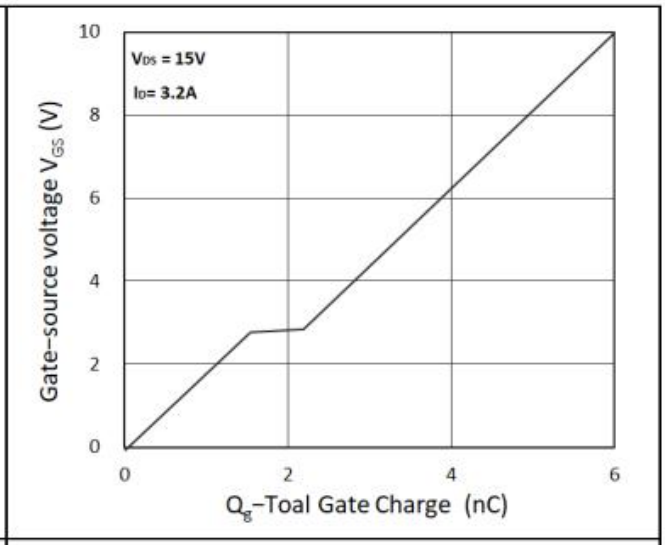
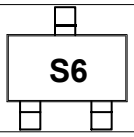


Figure 8. Gate Charge Characteristics

Marking Instructions

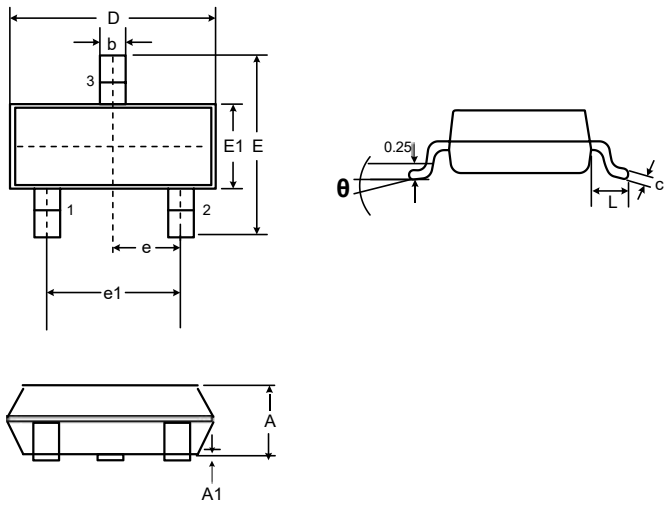
Part Number	CT032N30MA
Marking Code	

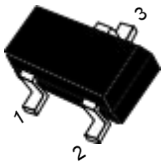
Package Information

Qty：3k/Reel

Outline Drawing – SOT-23

PACKAGE OUTLINE

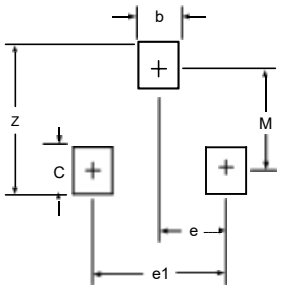




SOT-23

DIMENSIONS

SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.90	1.15	0.035	0.045
A1	0.00	0.10	0.000	0.004
b	0.30	0.50	0.012	0.020
c	0.08	0.15	0.003	0.006
D	2.80	3.00	0.110	0.118
E	2.25	2.55	0.089	0.100
E1	1.20	1.40	0.047	0.055
e	0.95 BSC		0.037BSC	
e1	1.80	2.00	0.071	0.079
L	0.55REF		0.022REF	
θ	0°	8°	0°	8°



DIMENSIONS		
DIM	INCHES	MILLIMETERS
M	0.080	2.02
C	0.032	0.80
Z	0.111	2.82
e	0.037 BSC	0.95 BSC
e1	0.075 BSC	1.90 BSC
b	0.032	0.80

Notes

1. Dimensioning and tolerances per ANSI Y14.5M, 1985.

2. Controlling Dimension: Inches

3. Pin 3 is the cathode (Unidirectional Only).

4. Dimensions are exclusive of mold flash and metal burrs.