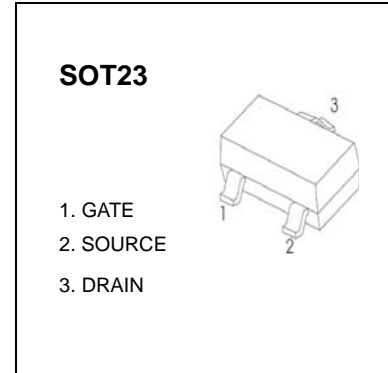


N-Channel 30-V (D-S) MOSFET

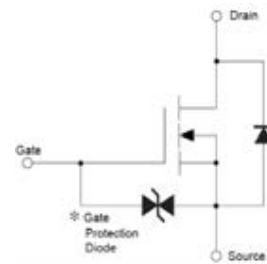
$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
30V	2.8Ω @ $V_{GS(th)}$ 1.5V	10mA
	2Ω @ $V_{GS(th)}$ 1.8V	100mA
	2Ω @ $V_{GS(th)}$ 2.5V	300mA
	1.2Ω @ $V_{GS(th)}$ 4.5V	400mA
	1.0Ω @ $V_{GS(th)}$ 10V	500mA


FEATURE

- Low on-resistance
- Fast switching speed
- Low voltage drive makes this device ideal for Portable equipment
- Easily designed drive circuits
- Easy to parallel

APPLICATION

- Interfacing , Switching

Equivalent Circuit

MARKING

.3N2K

Marking: .3N2K

MOSFET MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	±12	V
I_D	Continuous Drain Current	0.5	A
P_D	Power Dissipation	0.35	W
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	357	°C /W



N-Channel 30-V (D-S) MOSFET

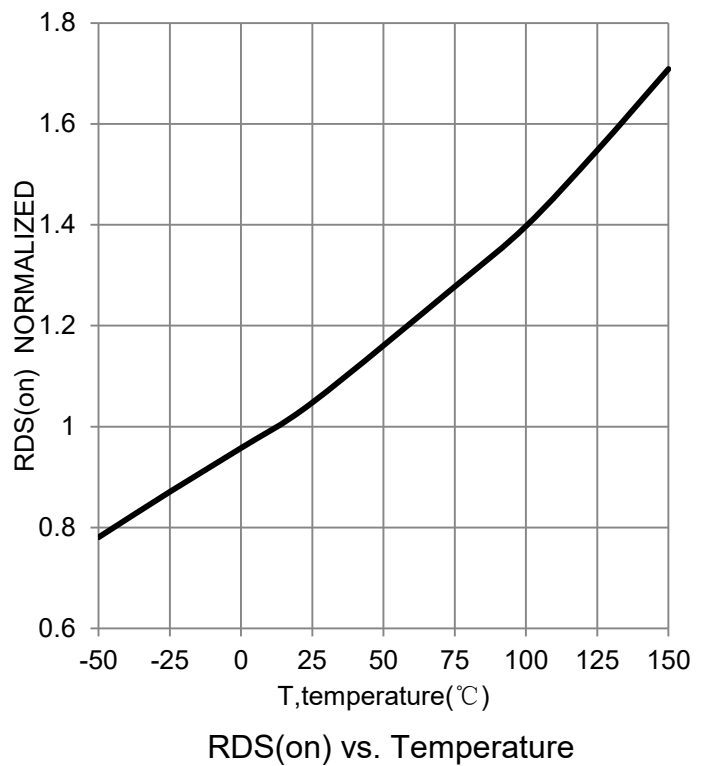
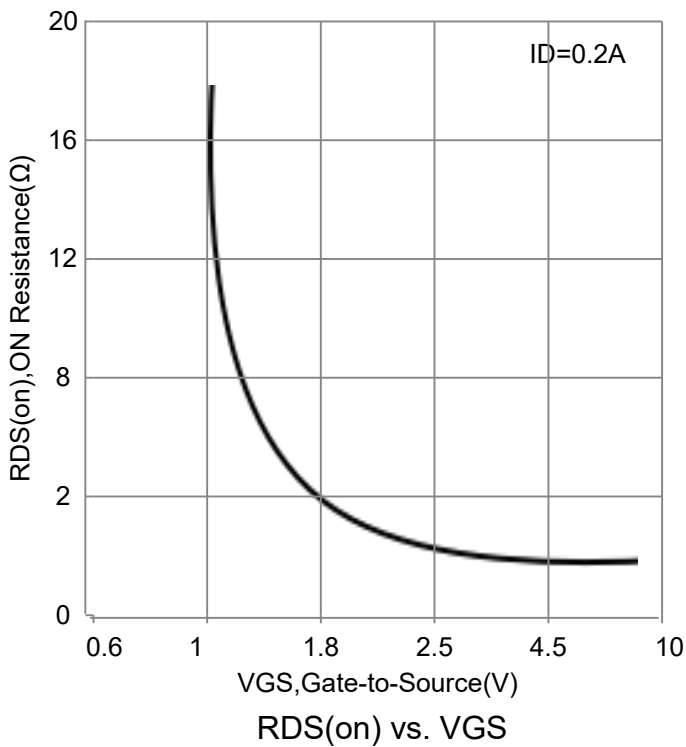
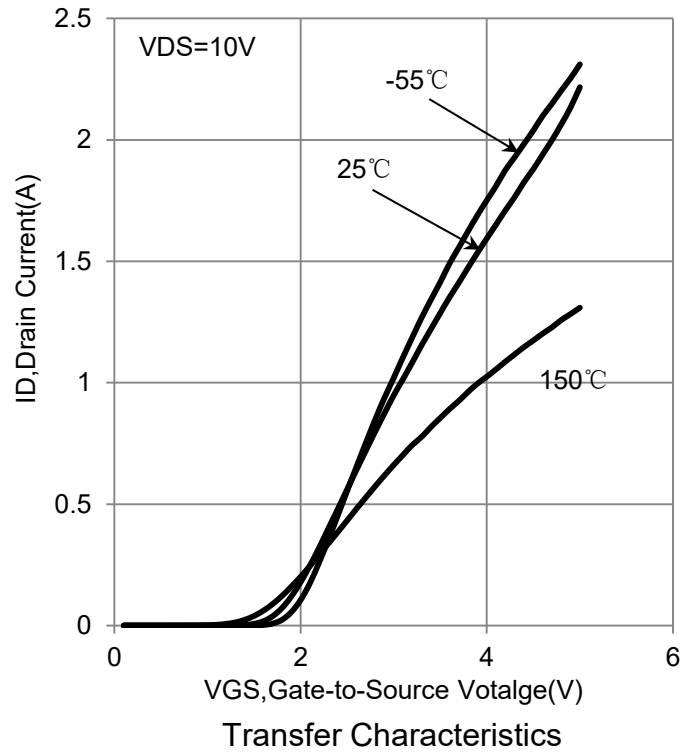
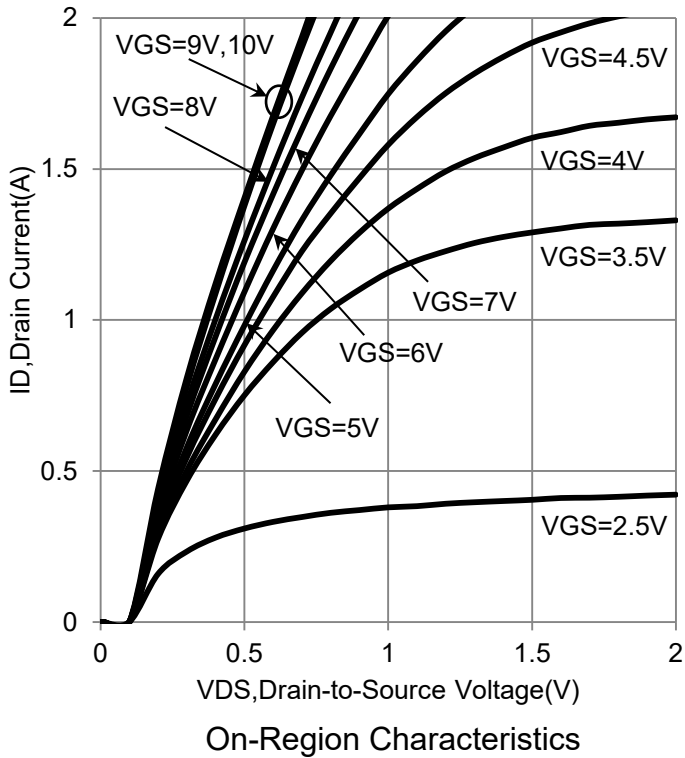
$T_a=25\text{ }^\circ\text{C}$ unless otherwise specified

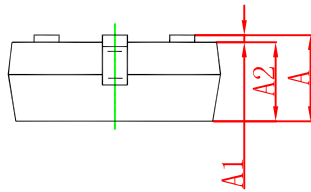
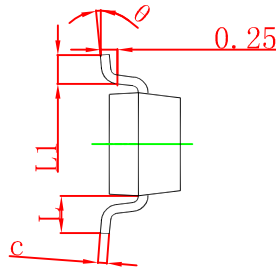
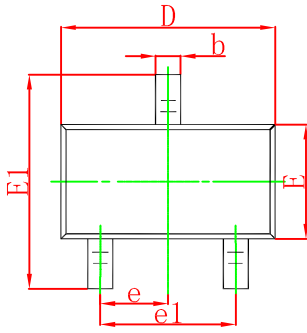
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Off Characteristics						
Drain-Source Breakdown Voltage	V_{DS}	$V_{GS} = 0V, I_D = 10\mu A$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 30V, V_{GS} = 0V$			1	μA
Gate -Source leakage current	I_{GSS}	$V_{GS} = \pm 12V, V_{DS} = 0V$			± 10	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.8	1.0	1.1	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 500mA$		0.25	0.8	Ω
		$V_{GS} = 4.5V, I_D = 400mA$		0.3	0.8	Ω
		$V_{GS} = 2.5V, I_D = 300mA$		0.65	1.2	Ω
		$V_{GS} = 1.8V, I_D = 200mA$		1.8	2.6	Ω
		$V_{GS} = 1.5V, I_D = 20mA$		2.8	3.4	Ω
Forward Transconductance	g_{FS}	$V_{DS} = 3V, I_D = 10mA$		0.33		mS
Dynamic Characteristics*						
Input Capacitance	C_{iss}	$V_{DS} = 5V, V_{GS} = 0V, f = 1MHz$		42		pF
Output Capacitance	C_{oss}			12.2		pF
Reverse Transfer Capacitance	C_{rss}			8		pF
Switching Characteristics*						
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = 5V, V_{DD} = 5V,$ $I_D = 10mA, R_g = 10\Omega, R_L = 500\Omega,$		15		ns
Rise Time	t_r			35		ns
Turn-Off Delay Time	$t_{d(off)}$			70		ns
Fall Time	t_f			70		ns

1. Surface-mounted on FR4 board using 1 in sq pad size (Cu area = 1.27 in sq [2 oz] including traces).
2. Pulse Test: Pulse Width $\leq 100\ \mu s$, Duty Cycle $\leq 2.0\%$.

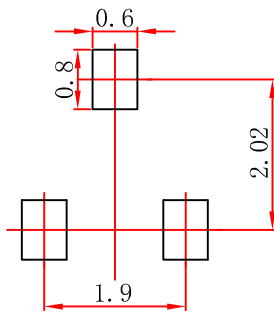


N-Channel 30-V (D-S) MOSFET



N-Channel 30-V (D-S) MOSFET


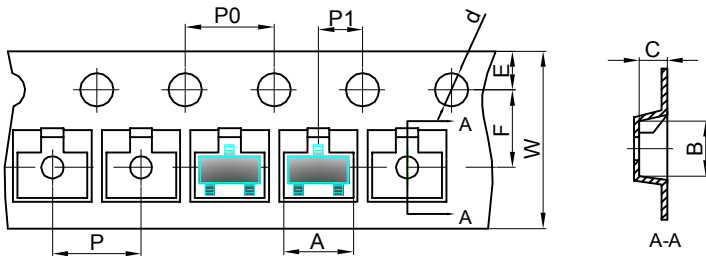
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 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°

SOT23 Suggested Pad Layout


- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.

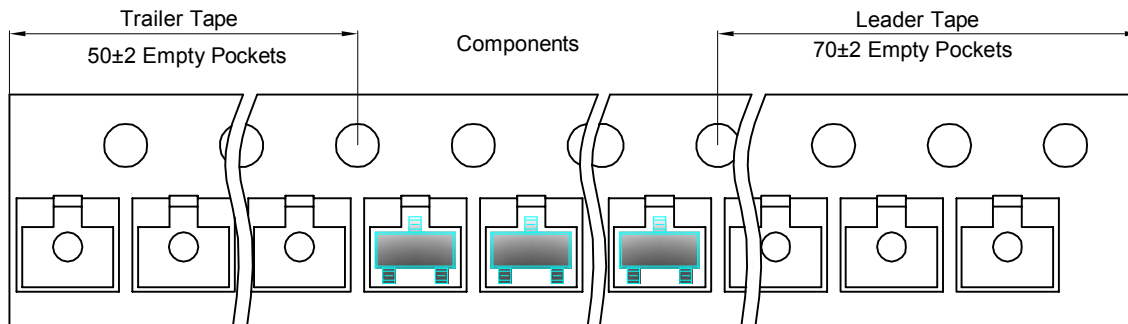
SOT23 Tape and reel

SOT23 Embossed Carrier Tape



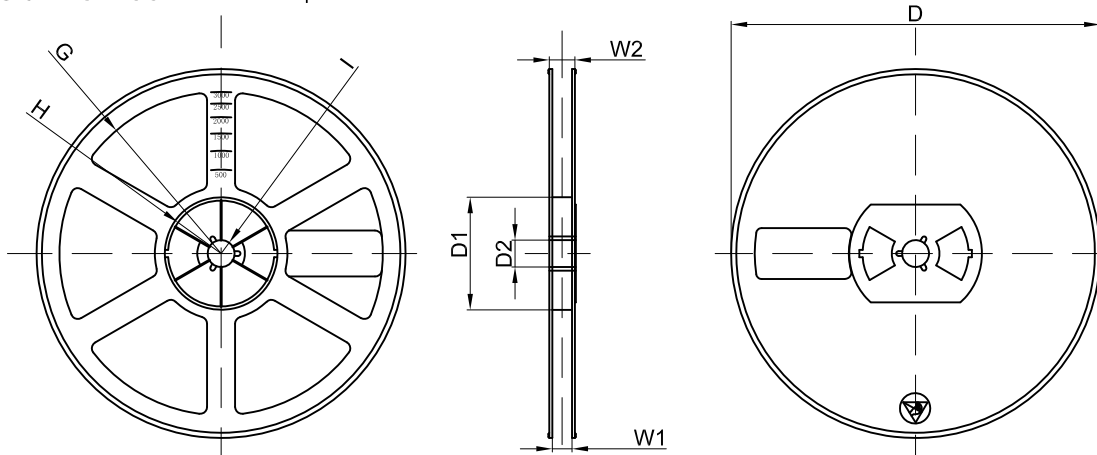
Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT23 Tape Leader and Trailer



SOT23 Reel

3000 pcs



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

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