

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

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
30V	0.8Ω@4.5V(max)	400mA
	1.0Ω@2.5V(max)	300mA

**SOT-23**

1. GATE
2. SOURCE
3. DRAIN

**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

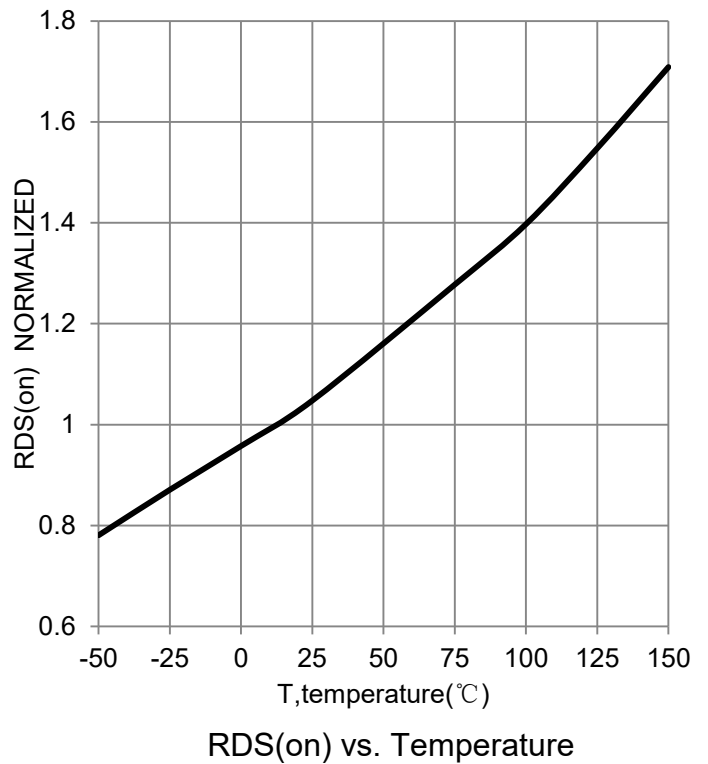
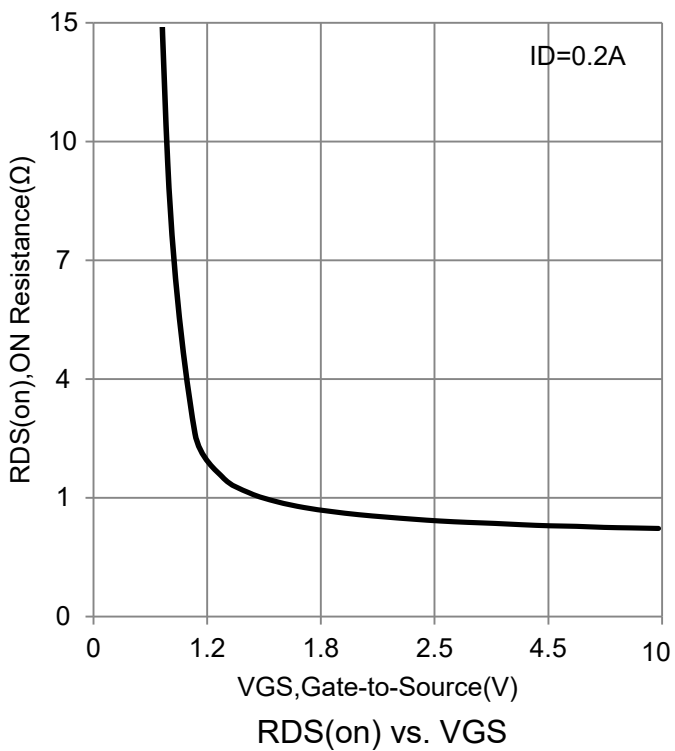
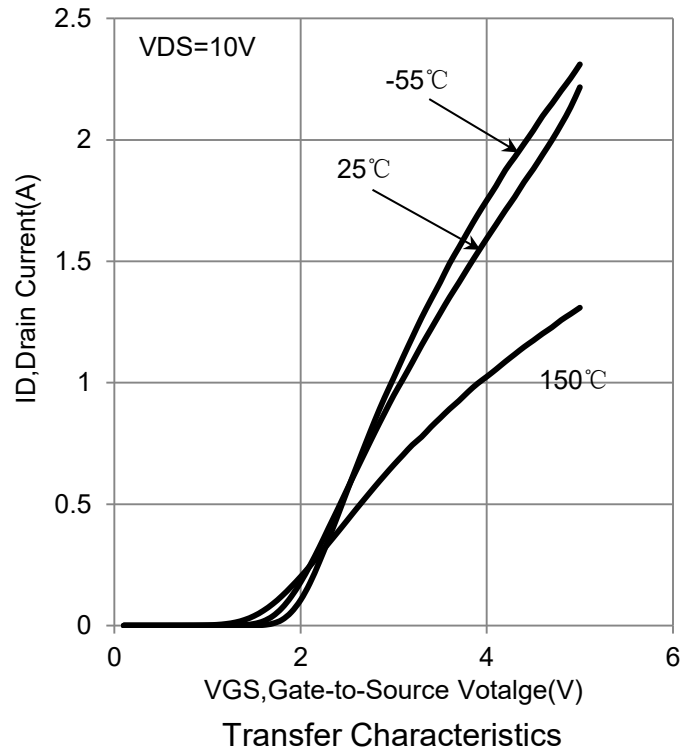
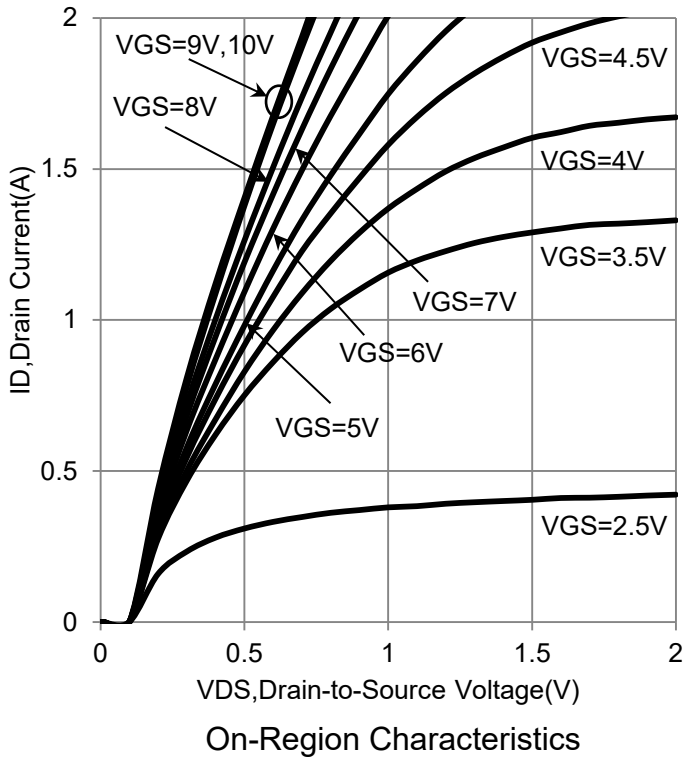
**Equivalent Circuit**
**MOSFET MAXIMUM RATINGS (Ta = 25°C unless otherwise noted)**

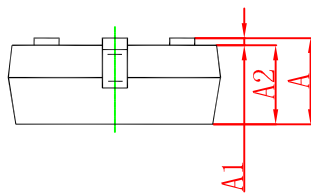
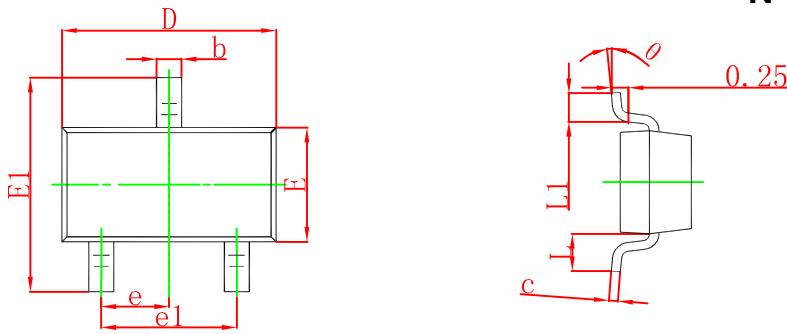
Symbol	Parameter	Value	Unit
$V_{DS}$	Drain-Source Voltage	30	V
$V_{GS}$	Gate-Source Voltage	±12	V
$I_D$	Continuous Drain Current	0.4	A
$P_D$	Power Dissipation	0.35	W
$T_J, T_{stg}$	Operation Junction and Storage Temperature Range	-55~+150	°C
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	357	°C /W

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**T<sub>a</sub>=25 °C unless otherwise specified**

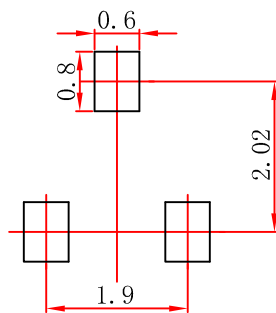
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
<b>Off Characteristics</b>						
Drain-Source Breakdown Voltage	V <sub>DS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> =250μA	30			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> = 0V			1	μA
Gate –Source leakage current	I <sub>GSS</sub>	V <sub>GS</sub> =±10V, V <sub>DS</sub> = 0V			±10	μA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> =250μA	0.78		1.1	V
Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = 4.5V, I <sub>D</sub> =400mA		0.4	0.8	Ω
		V <sub>GS</sub> = 2.5V, I <sub>D</sub> =300mA		0.7	1.0	Ω
Forward Transconductance	g <sub>fs</sub>	V <sub>DS</sub> =3V, I <sub>D</sub> =10mA		0.33		mS
<b>Dynamic Characteristics*</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =5V, V <sub>GS</sub> =0V, f =1MHz		42		pF
Output Capacitance	C <sub>oss</sub>			12.2		pF
Reverse Transfer Capacitance	C <sub>rss</sub>			8		pF
<b>Switching Characteristics*</b>						
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>GS</sub> =5V, V <sub>DD</sub> =5V, I <sub>D</sub> =10mA, R <sub>g</sub> =10Ω, R <sub>L</sub> =500Ω,		15		ns
Rise Time	t <sub>r</sub>			35		ns
Turn-Off Delay Time	t <sub>d(off)</sub>			70		ns
Fall Time	t <sub>f</sub>			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 ≤100 μs, Duty Cycle ≤2.0%.

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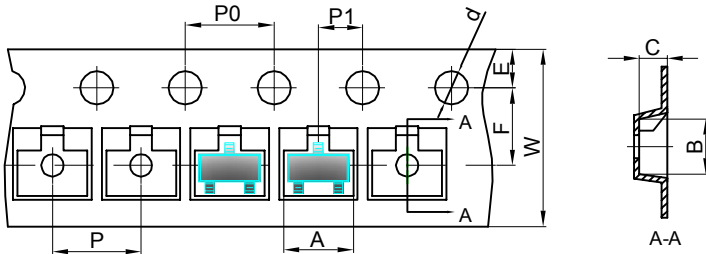
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037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

**SOT-23 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.

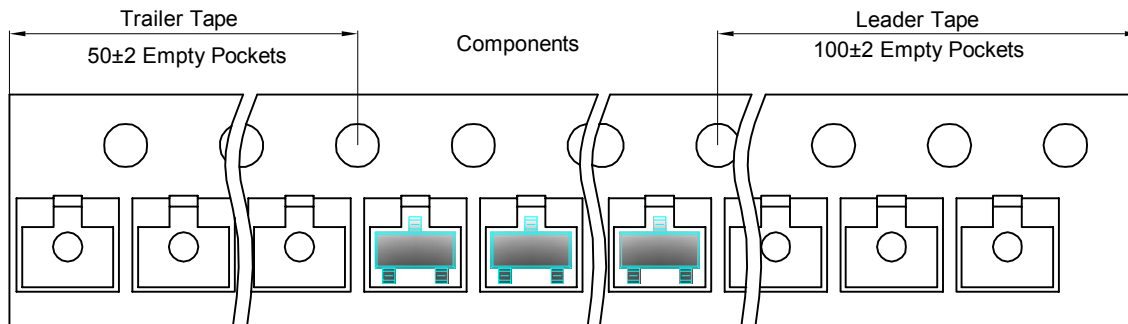
## SOT-23 Tape and reel

SOT-23 Embossed Carrier Tape



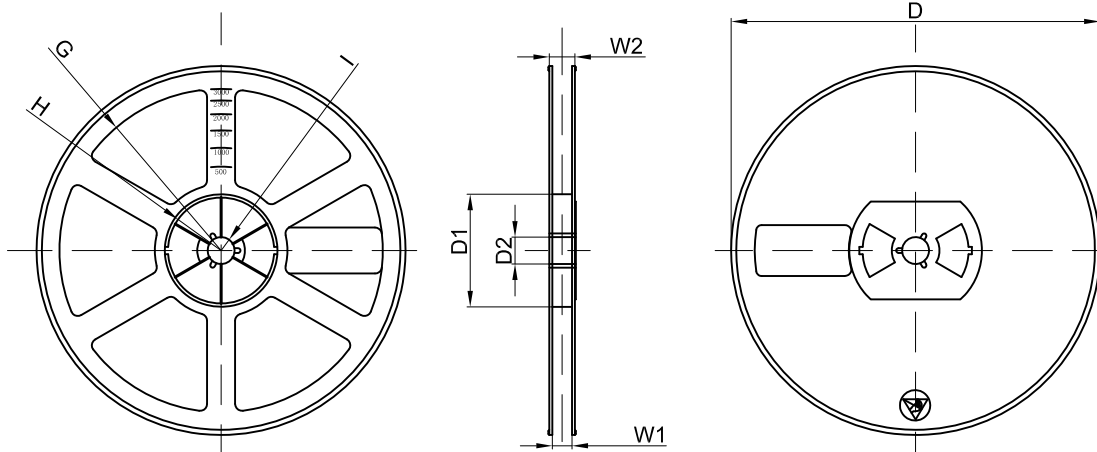
Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

## SOT-23 Tape Leader and Trailer



## SOT-23 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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