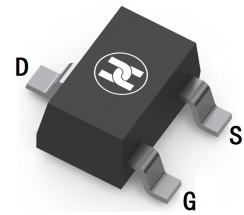
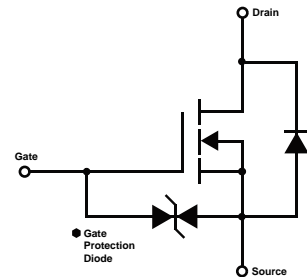


**MOSFET (N-CHANNEL)**
**FEATURES**

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


**SOT-323**

**Equivalent circuit**
**MECHANICAL DATA**

- Case: SOT-323
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.006 grams (approximate)
- **Marking:KN**

**MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise noted)**

Parameter	Symbol	Value	Unit
Drain-source voltage	V <sub>DS</sub>	30	V
Gate-source voltage	V <sub>GS</sub>	±20V	V
Continuous drain current	I <sub>D</sub>	0.1	A
Power dissipation	P <sub>D</sub>	0.2	W
Thermal resistance from Junction to ambient	R <sub>θJA</sub>	625	°C/W
Junction and Storage temperature	T <sub>J</sub> , T <sub>STG</sub>	-55 ~+150	°C

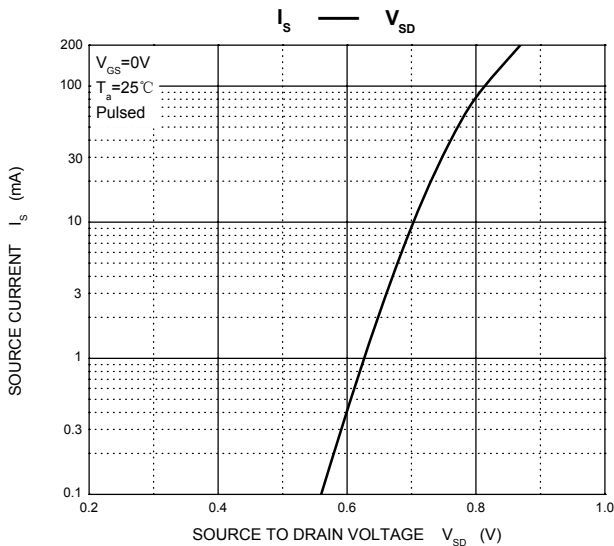
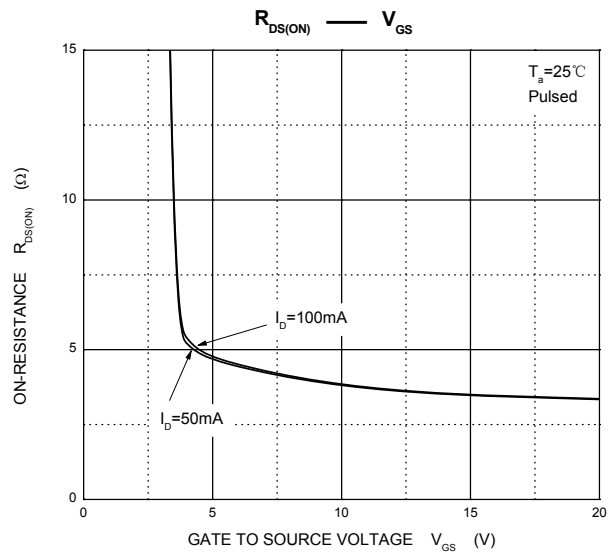
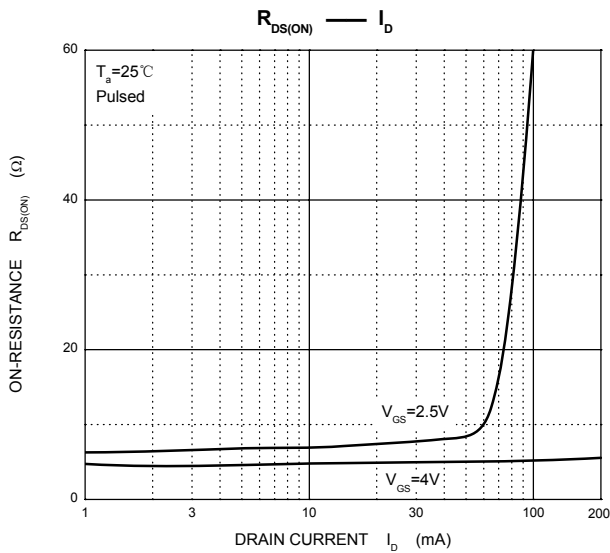
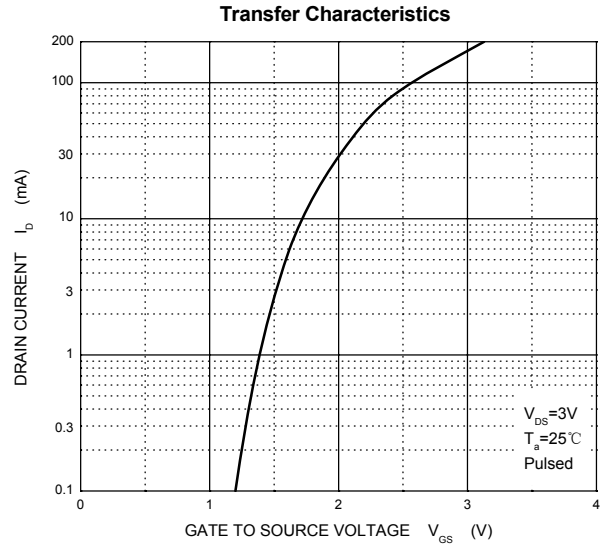
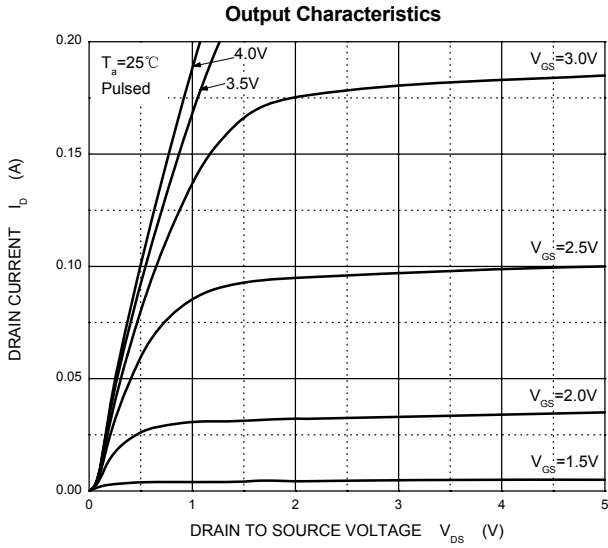
**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
<b>Off Characteristics</b>						
Drain-Source breakdown voltage	V <sub>(BR)DSS</sub>	30			V	V <sub>GS</sub> =0V, I <sub>D</sub> =10μA
Zero gate voltage drain current	I <sub>DSS</sub>			0.2	μA	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V
Gate-body leakage current	I <sub>GSS</sub>			±500	nA	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V
Gate-threshold voltage (note 1)	V <sub>GS(th)</sub>	0.8		1.5	V	V <sub>DS</sub> =3V, I <sub>D</sub> =100μA
Drain-source on-resistance (note 1)	R <sub>DS(ON)</sub>			8	Ω	V <sub>GS</sub> =4V, I <sub>D</sub> =10mA
				13	Ω	V <sub>GS</sub> =2.5V, I <sub>D</sub> =1mA
Forward transconductance (note 1)	g <sub>FS</sub>	20			mS	V <sub>DS</sub> =3V, I <sub>D</sub> =10mA
<b>Dynamic Characteristics</b>						
Input capacitance	C <sub>iss</sub>		13		pF	V <sub>DS</sub> =5V, V <sub>GS</sub> =0V, f=1MHz
Output capacitance	C <sub>oss</sub>		9		pF	
Reverse transfer capacitance	C <sub>rss</sub>		4		pF	
<b>Switching Characteristics</b>						
Turn-on delay time	t <sub>d(on)</sub>		15		nS	V <sub>DD</sub> =5V, V <sub>GS</sub> =5V, I <sub>D</sub> =10mA, R <sub>g</sub> =10Ω, R <sub>L</sub> =500Ω
Turn-on rise time	t <sub>r</sub>		35		nS	
Turn-off delay time	t <sub>d(off)</sub>		80		nS	
Turn-off fall time	t <sub>f</sub>		80		nS	

Note:1. Pulse test ; Pulse width ≤300μs, Duty cycle ≤ 2% .

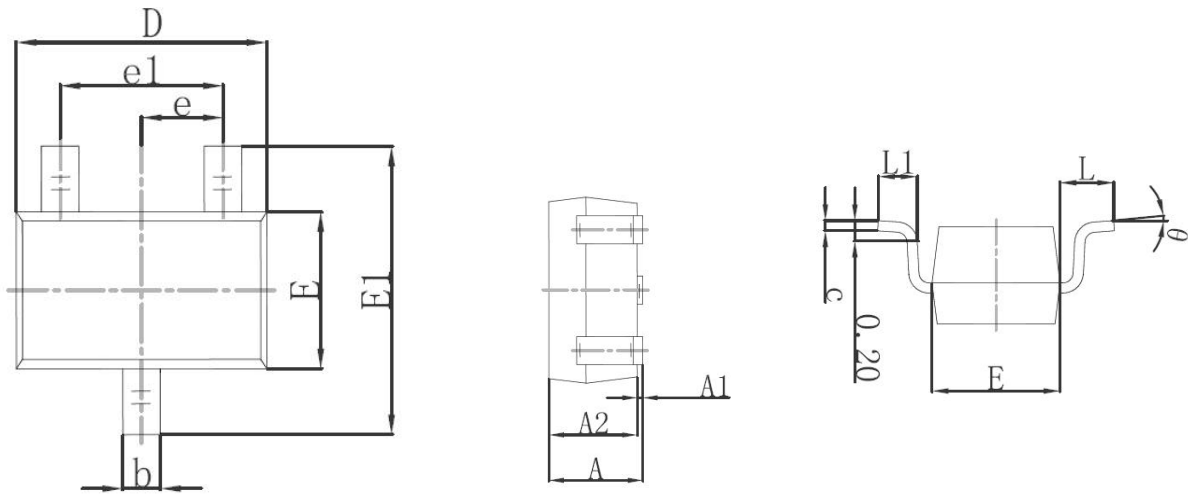
MOSFET (N-CHANNEL)

Typical Characteristics



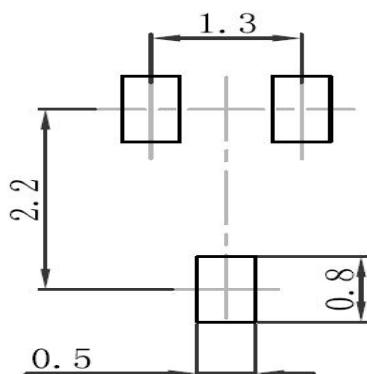
MOSFET (N-CHANNEL)

SOT-323 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650TYP		0.026TYP	
e1	1.200	1.400	0.047	0.055
L	0.525REF		0.021REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-323 Suggested Pad Layout



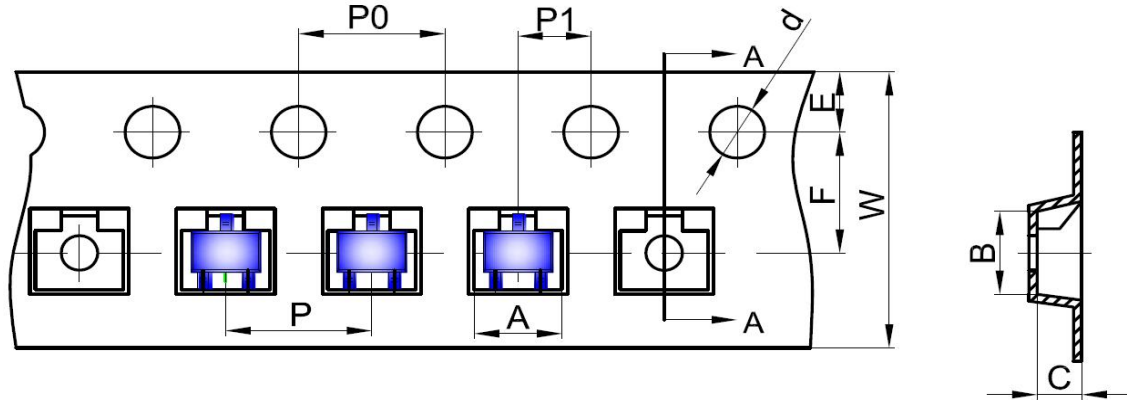
**Note:**

1. Controlling dimension: in millimeters
2. General tolerance: ±0.05mm
3. The pad layout is for reference purposes only

MOSFET (N-CHANNEL)

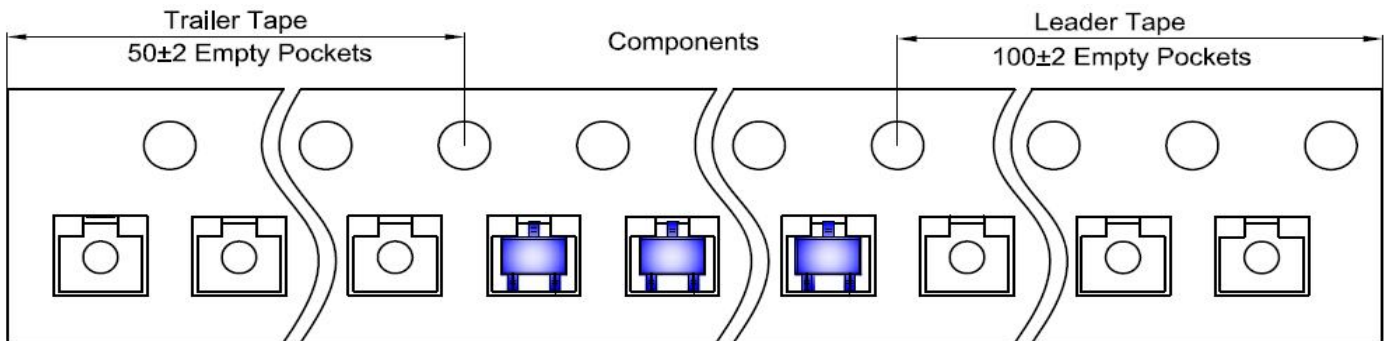
**SOT-323 Tape and Reel**

**SOT-323 Embossed Carrier Tape**

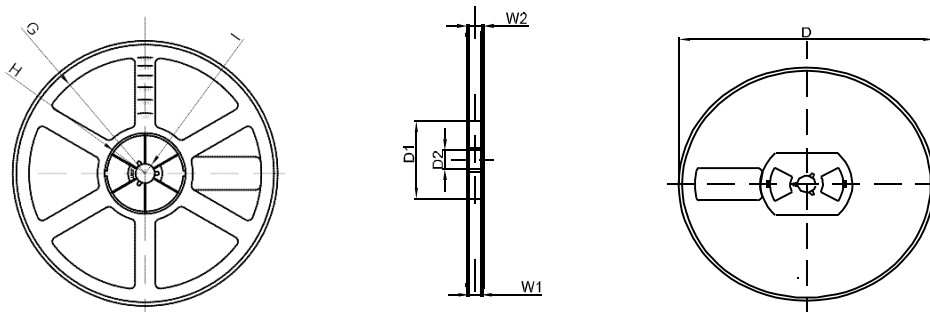


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-323	2.25	2.55	1.19	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

**SOT-323 Tape Leader and Trailer**



**SOT-323 Reel**



DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
7" DIA	Ø178	54.40	13.00	R78	R25.60	R6.50	9.50	12.30
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1