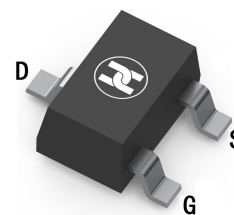
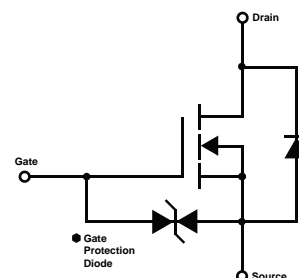


MOSFET (N-CHANNEL)
FEATURES

- 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_A = 25°C unless otherwise noted)

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

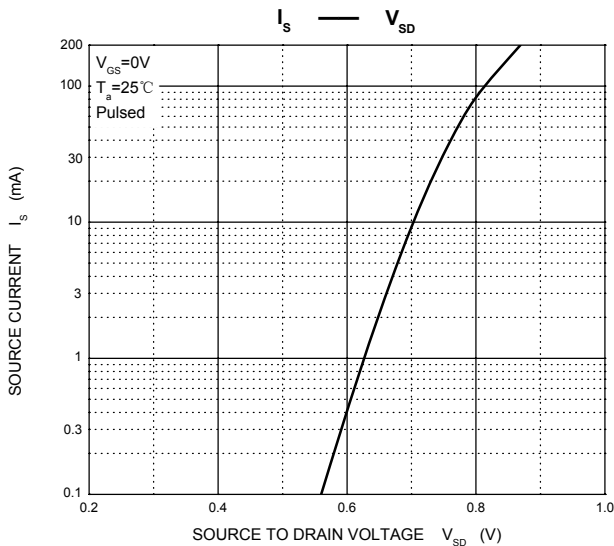
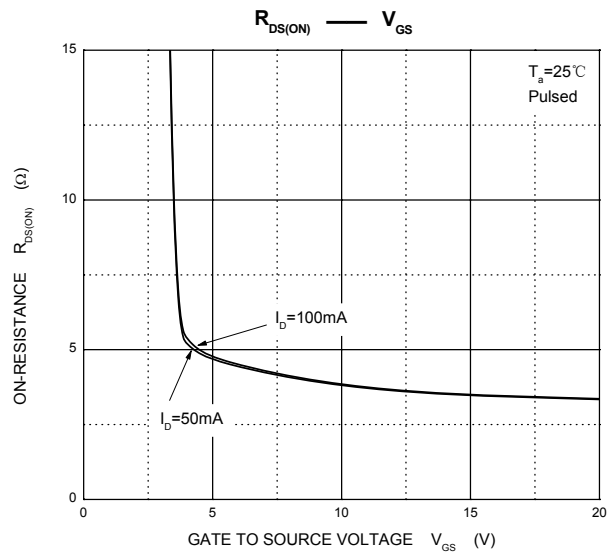
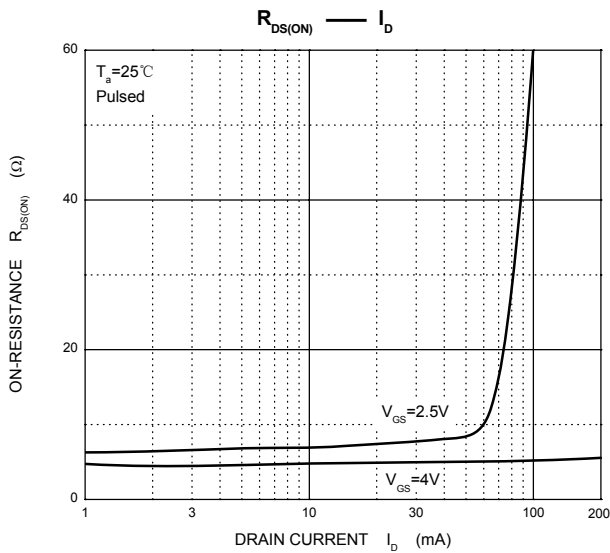
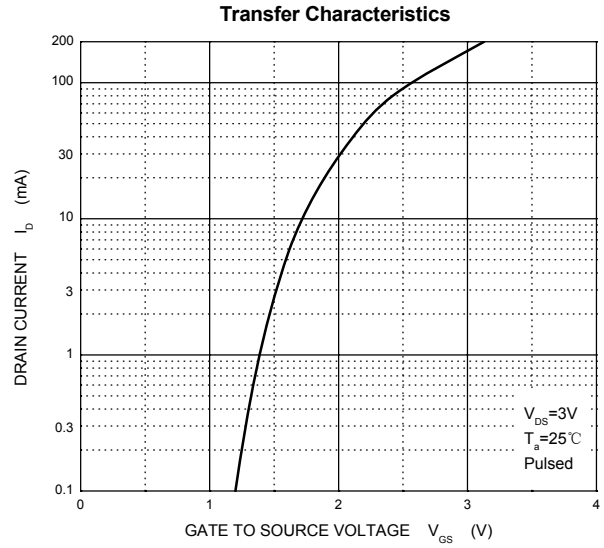
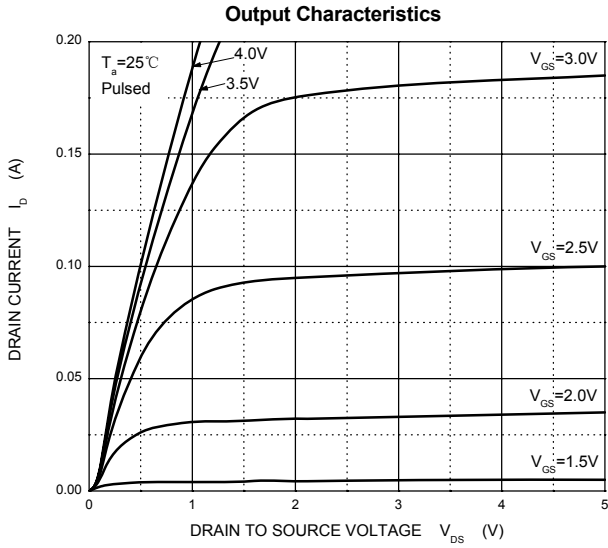
ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

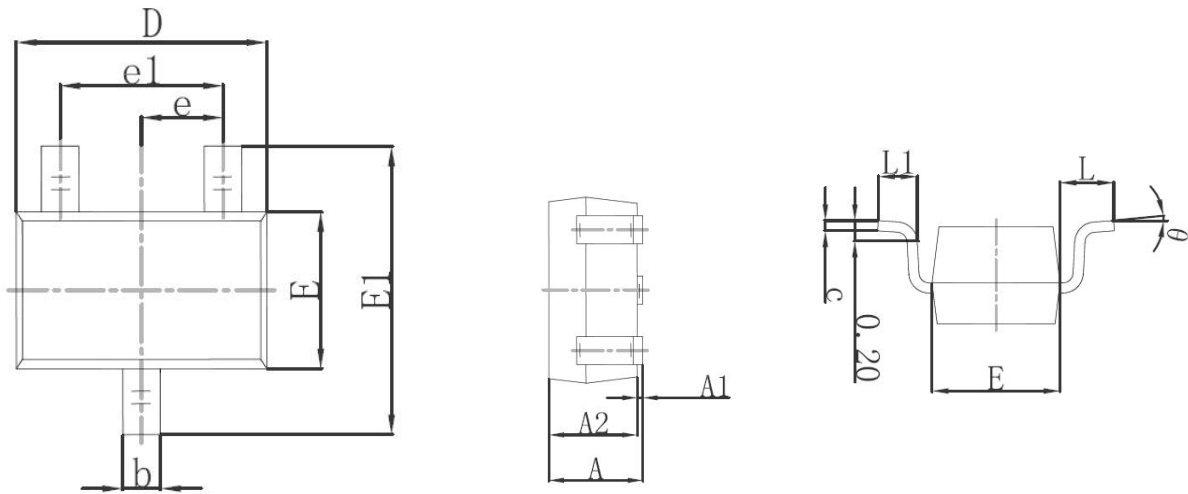
Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Off Characteristics						
Drain-Source breakdown voltage	V _{(BR)DSS}	30			V	V _{GS} =0V, I _D =10μA
Zero gate voltage drain current	I _{DSS}			0.2	μA	V _{DS} =30V, V _{GS} =0V
Gate-body leakage current	I _{GSS}			±500	nA	V _{DS} =0V, V _{GS} =±20V
Gate-threshold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

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

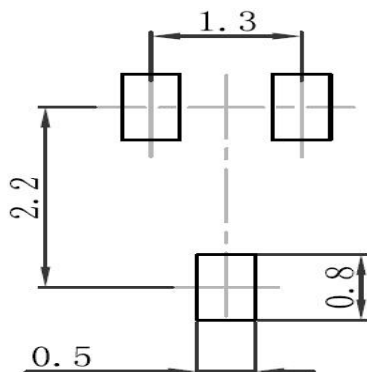
MOSFET (N-CHANNEL)

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°

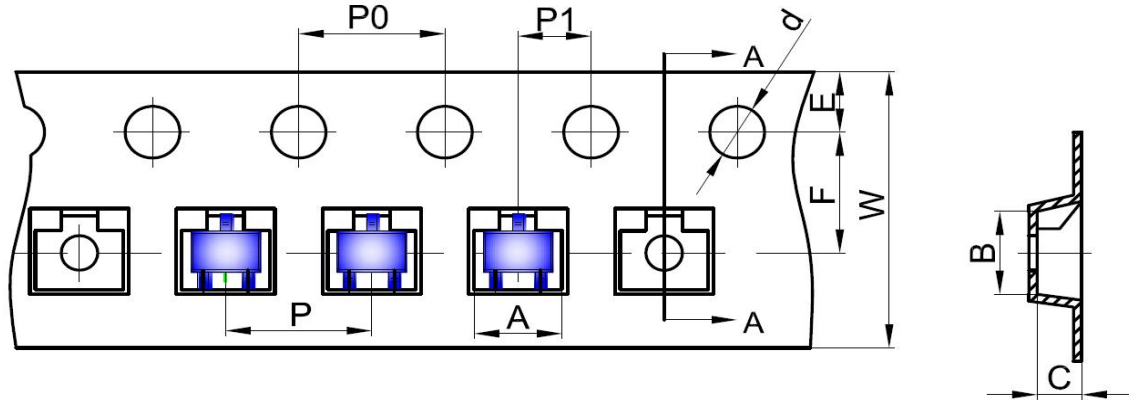
SOT-323 Suggested Pad Layout

Note:

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

MOSFET (N-CHANNEL)

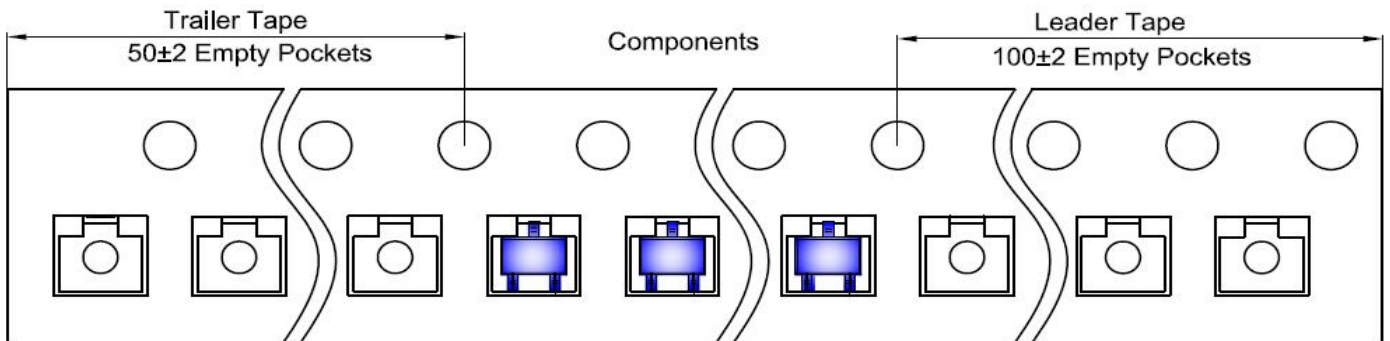
SOT-323 Tape and Reel

SOT-323 Embossed Carrier Tape

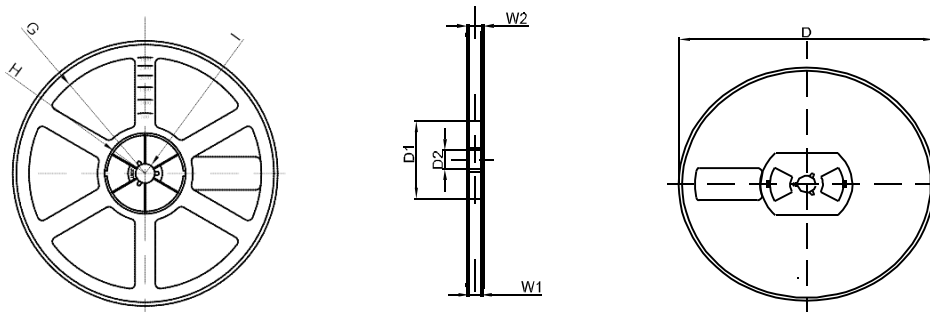


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-323	2.25	2.55	1.19	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

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