

SOT-323 Plastic-Encapsulate MOSFETS

N-channel MOSFET

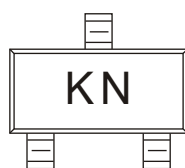
FEATURE

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

APPLICATION

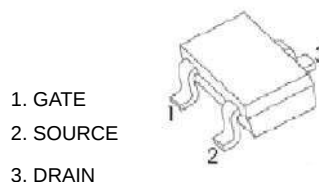
- Interfacing , Switching

MARKING

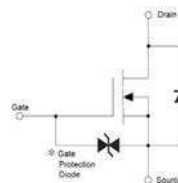


KN=Device code

SOT-323



Equivalent Circuit



$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
30 V	$8\Omega@4V$	100mA
	$13\Omega@2.5V$	

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

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source voltage	30	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current	0.1	A
P_D	Power Dissipation	0.2	W
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55-150	$^\circ C$
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	625	$^\circ C / W$

MOSFET ELECTRICAL CHARACTERISTICS

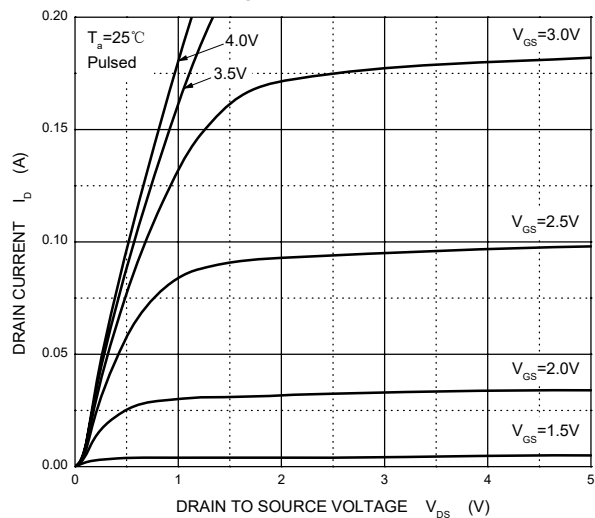
$T_a=25^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Off Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 10μA	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V,V _{GS} = 0V			0.2	μA
Gate –Source leakage current	I _{GSS}	V _{GS} =±20V, V _{DS} = 0V			±2	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = 3V, I _D =100μA	0.8		1.5	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 4V, I _D =10mA		5	8	Ω
		V _{GS} =2.5V,I _D =1mA		8	13	Ω
Forward Transconductance	g _{FS}	V _{DS} =3V, I _D = 10mA	20			mS
Dynamic Characteristics*						
Input Capacitance	C _{iss}	V _{DS} =5V,V _{GS} =0V,f =1MHz		13		pF
Output Capacitance	C _{oss}			9		pF
Reverse Transfer Capacitance	C _{rss}			4		pF
Switching Characteristics*						
Turn-On Delay Time	t _{d(on)}	V _{GS} =5V, V _{DD} =5V, I _D =10mA, R _g =10Ω, R _L =500Ω		15		ns
Rise Time	t _r			35		ns
Turn-Off Delay Time	t _{d(off)}			80		ns
Fall Time	t _f			80		ns

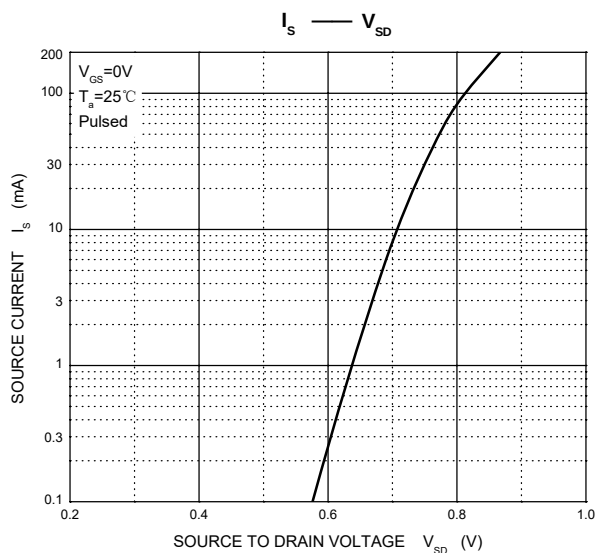
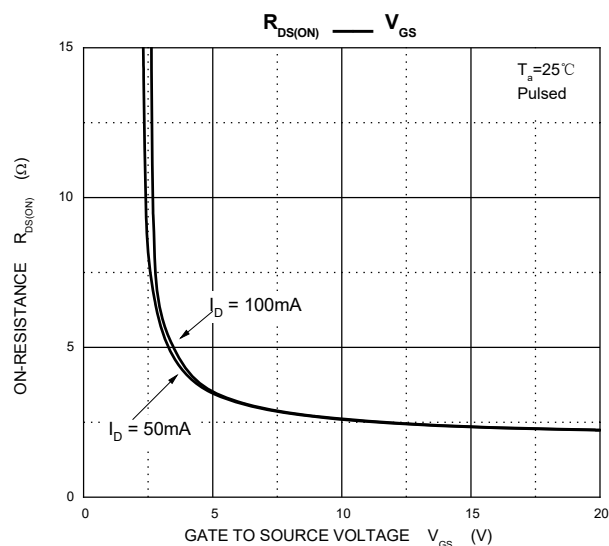
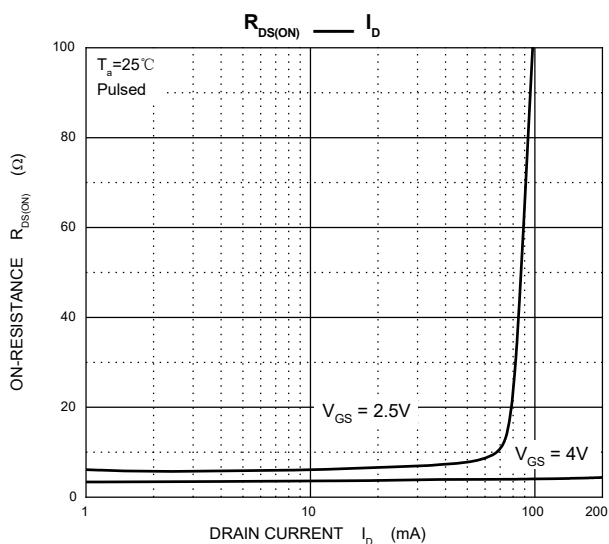
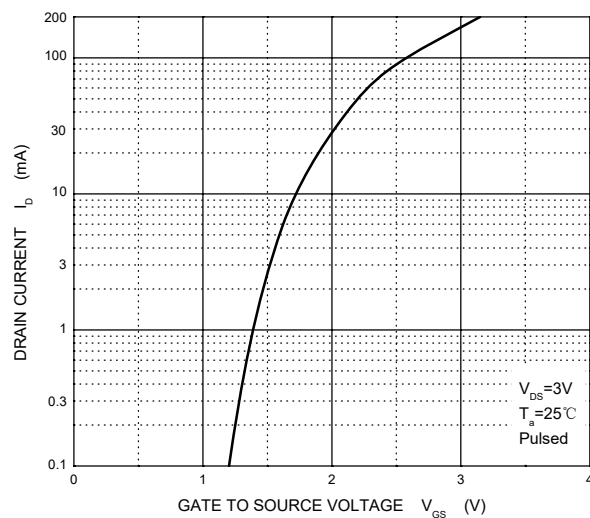
*These parameters have no way to verify.

Typical Characteristics

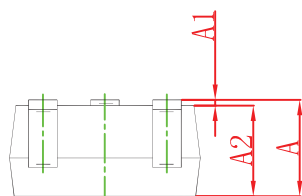
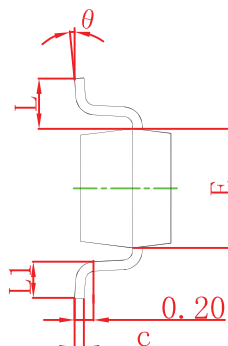
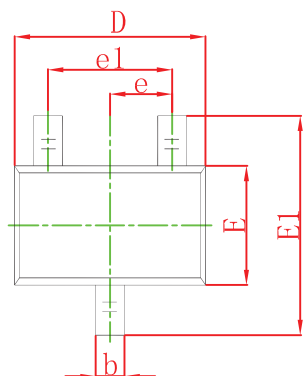
Output Characteristics



Transfer Characteristics

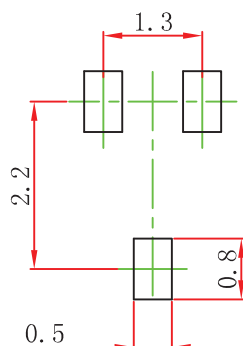


SOT-323 Package Outline Dimensions



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	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
K	0°	8°	0°	8°

SOT-323 Suggested Pad Layout

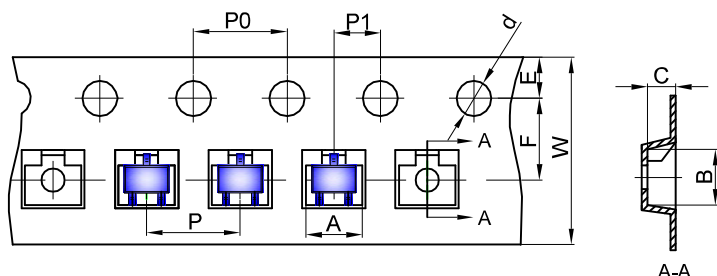


Note:

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

SOT-323 Tape and Reel

SOT-323 Embossed Carrier Tape

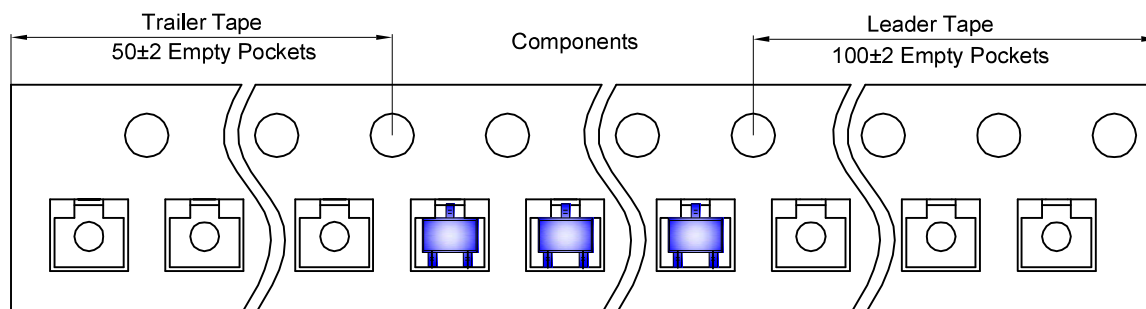


Packaging Description:

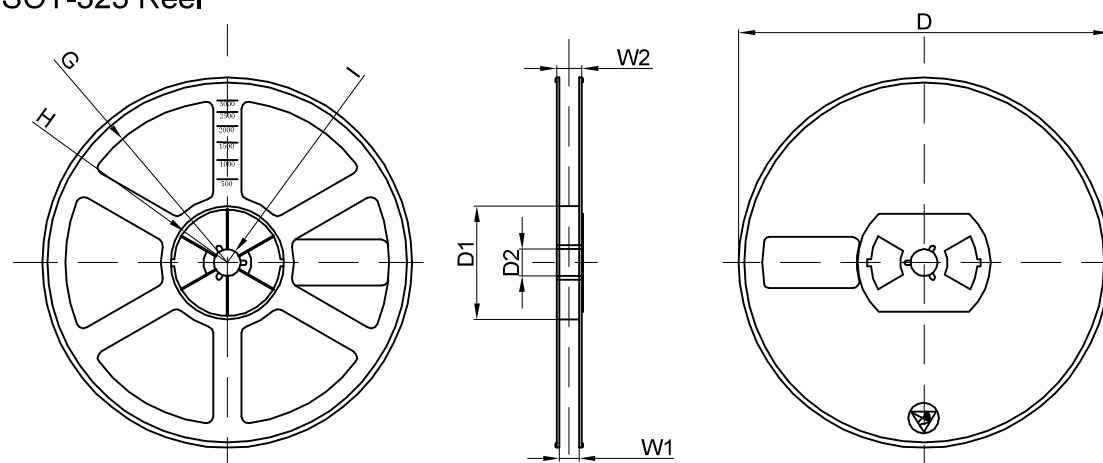
SOT-323 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-323	2.25	2.55	1.19	Ø1.55	1.75	3.50	4.00	4.00	2.00	8.00

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	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	30,000 pcs	203×203×195	120,000 pcs	438×438×220	