/ Descriptions

SOT-523 N MOS

N-CHANNEL MOSFET in a SOT-523 Plastic Package.

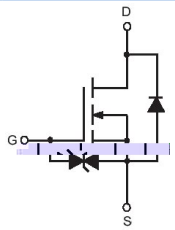
/ Features

Sensitive gate trigger current and Low Holding current.ESD protected,HF Product.

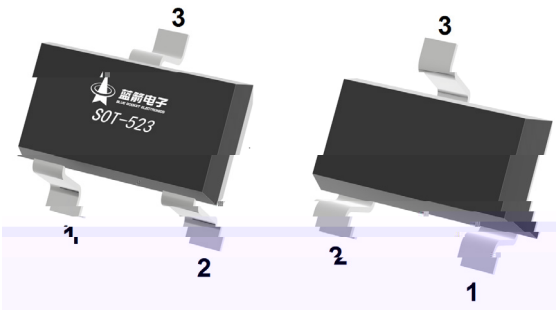
/ Applications

Intended for use in general purpose switching and phase control applications.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 S PIN 3 D

/ Marking

Marking	KN

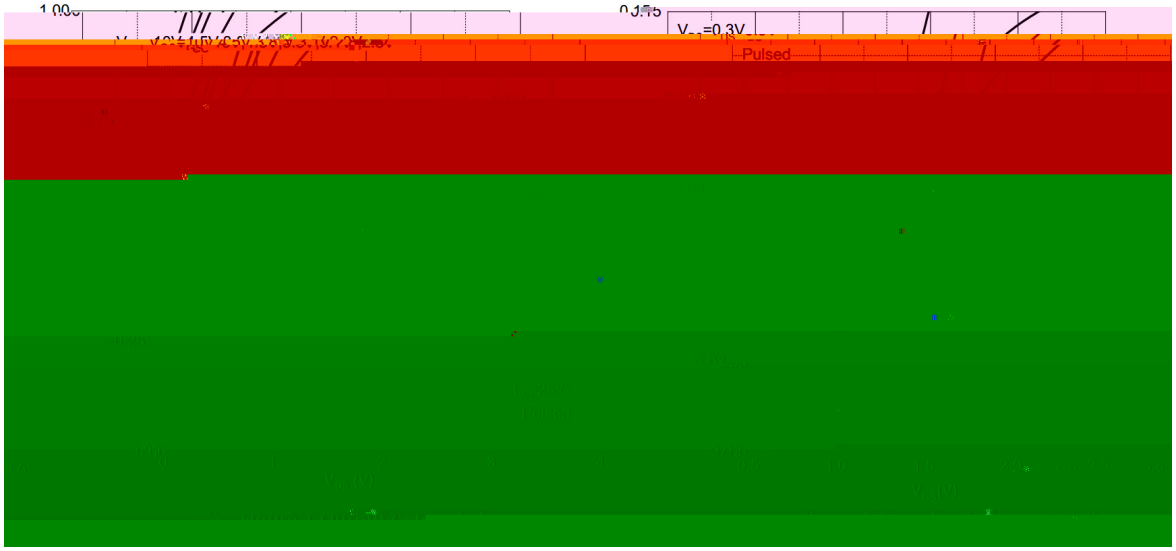
/ Absolute Maximum Ratings(Ta=25)

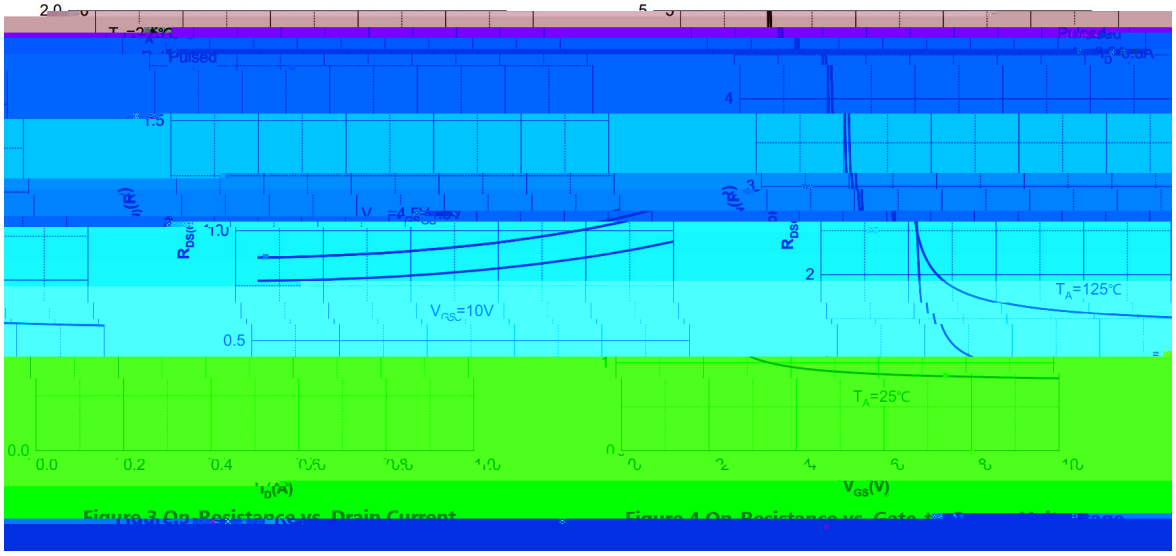
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	50	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current	I_D	300	mA
Drain Current – Pulsed	I_{DM}	1200	mA
Power Dissipation	P_D	250	mW
Junction Temperature Range	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	
Thermal Resistance from Junction to Ambient	R JA	500	/W

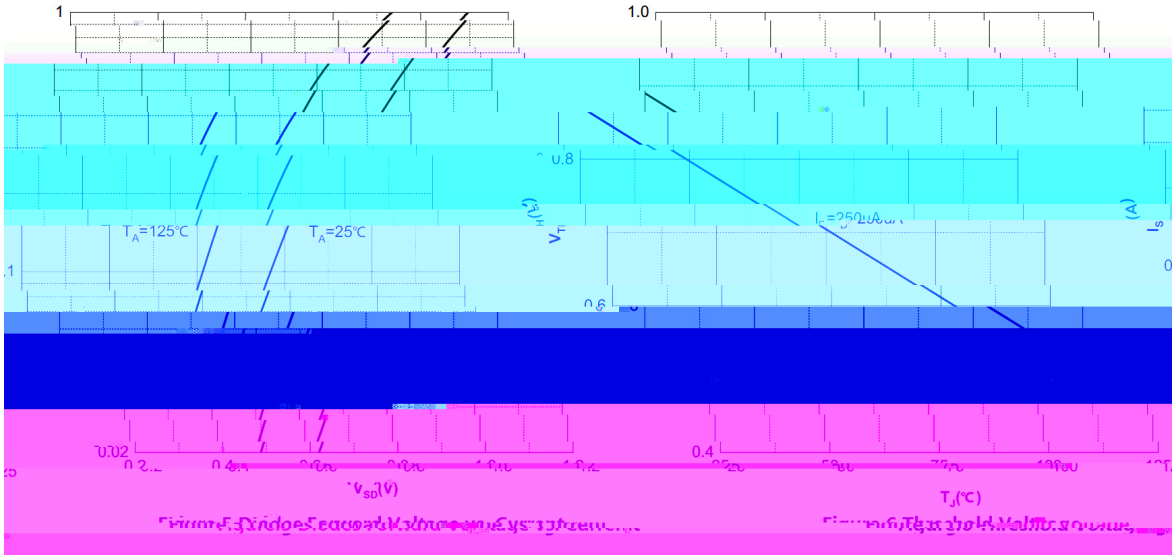
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	V_{DSS}	V_{GS}=0 I_D=250 A	50			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0 V_{DS}=50V			1.0	A
Gate-Source Leakage current	I_{GSS}	V_{DS}=0V V_{GS}=±20V			±2	A
Static Drain-Source On-Resistance	$R_{DS(on)(1)}$	V_{GS}=10V I_D=0.3A		0.92	2.5	
	$R_{DS(on)(2)}$	V_{GS}=4.5V I_D=0.2A		0.98	3	
	$R_{DS(on)(3)}$	V_{GS}=2.5V I_D=0.01A		1.2	4.5	
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=300mA			1.2	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250uA	0.6	0.9	1.5	V
Input Capacitance	C_{iss}	V_{GS}=0V, f=1MHz, V_{DS}=15V		30		pF
Output Capacitance	C_{oss}			5.2		
Reverse Transfer Capacitance	C_{rss}			3.3		
Gate Resistance	R_g	V_{DS} = 0V, V_{GS} = 0V, f = 1MHz		157		
Turn On Delay Time	$t_{d(ON)}$	V_{GS} =5V, V_{DD}=5V, R_L=500 , R_G=10		15		ns
Rise Time	t_r			35		
Turn Off Delay Time	$t_{d(OFF)}$			80		
Fall Time	t_f			80		

/ Electrical Characteristic Curve







/ Electrical Characteristic Curve

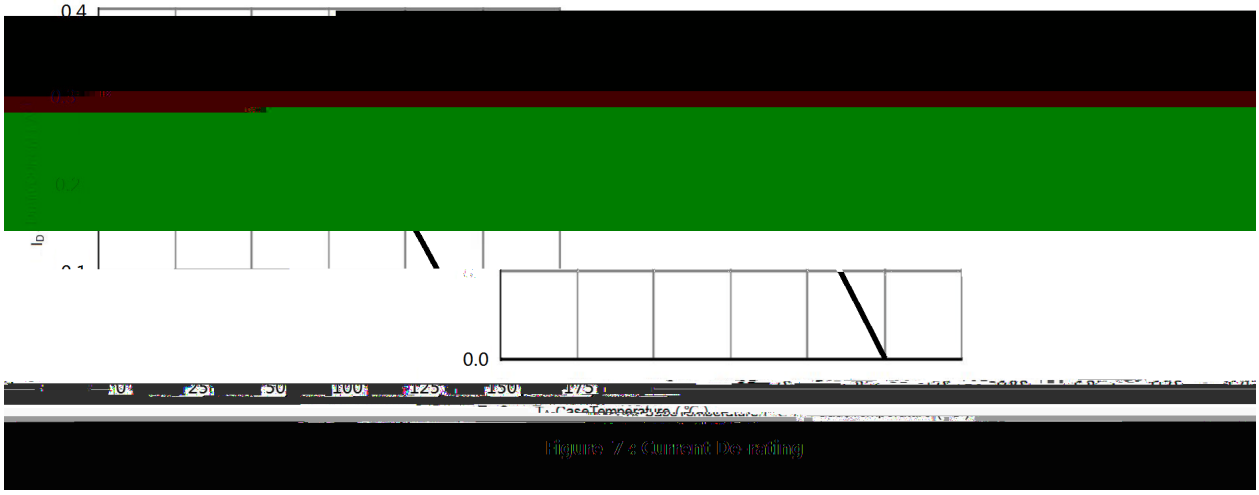
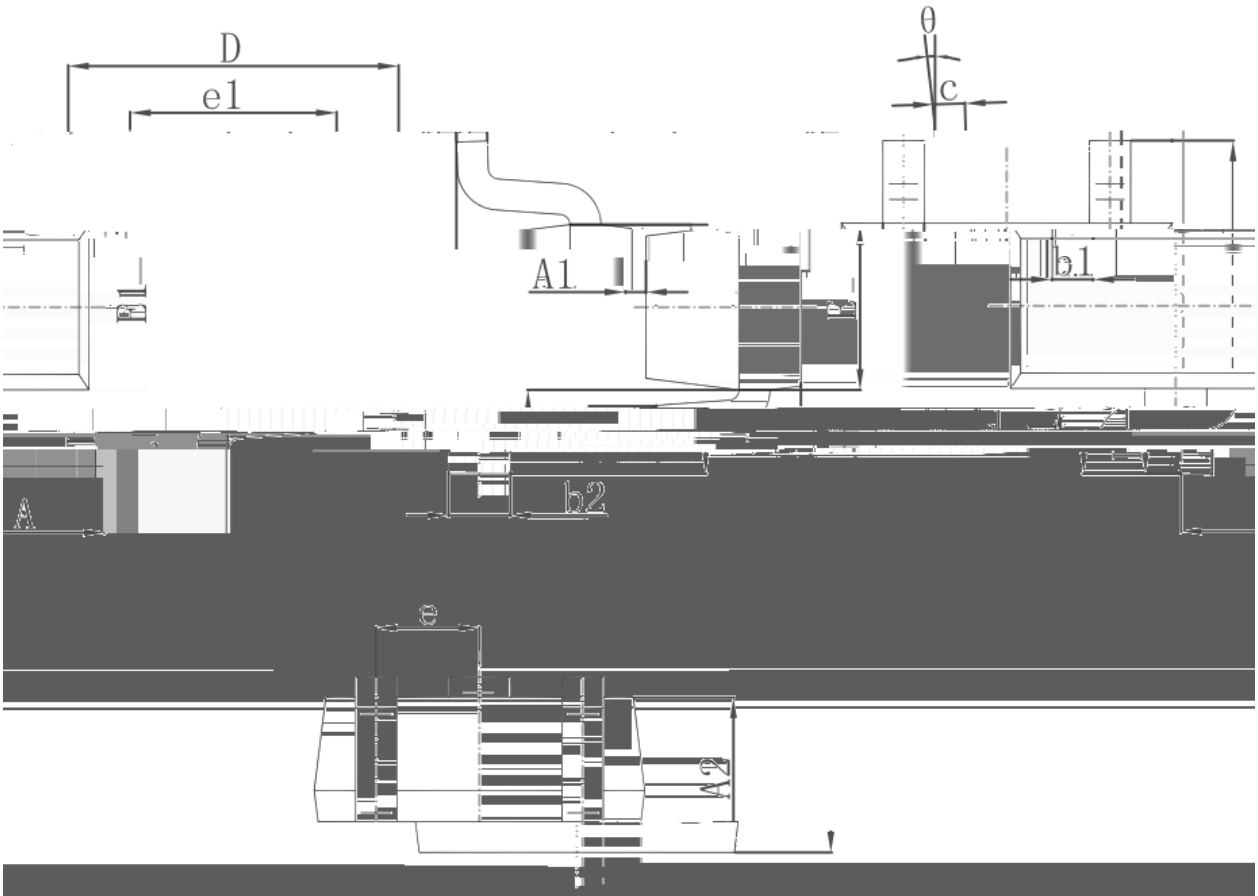


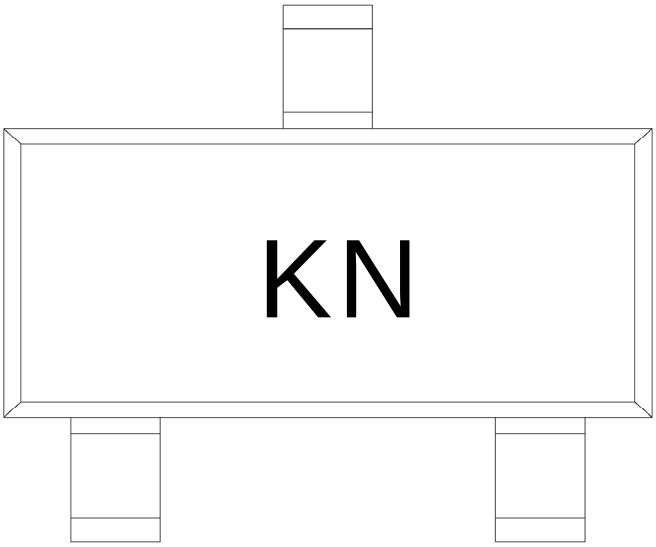
Figure 7 Current De-rating

/ Package Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b	0.250	0.350	0.010	0.014
b1	0.245	0.345	0.010	0.014
b2	0.245	0.345	0.010	0.014
c	0.100	0.200	0.004	0.008
D	2.750	3.050	0.108	0.120
E	2.650	2.950	0.104	0.116
E1	1.500	1.700	0.059	0.067
E2	0.700	0.900	0.028	0.035
e	1.450	1.750	0.057	0.069
e1	0.500 TYP.		0.020 TYP.	
L	0.900	1.100	0.035	0.043
L1	0.400 REF.		0.016 REF.	
θ	0.260	0.460	0.010	0.018
	0°	8°	0°	8°

/ Marking Instructions



KN

Note:

KN: Product Type Code

( ) / Temperature Profile for IR Reflow Soldering(Pb-Free)

						Note:
1	150	180		60	90sec;	1.Preheating:150~180 , Time:60~90sec.
2	245±5				5±0.5sec;	2.Peak Temp.:245±5 , Duration:5±0.5sec.
3			2	10	/sec.	3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

605±5 (/ -5.7(Packagling)24286(SPEC.( )]TJ/TT7 1 Tf03.4485 32.3713 TD.0004 Tc-35.65309:602513T