

/ Descriptions

SOT-523 N MOS

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

/ Features $V_{DS}(V)=20\text{ V}$ $I_D=0.75\text{A}$ $R_{DS(ON)}@4.5\text{V}\leq 380\text{m}\Omega(\text{Typ.}170\text{m}\Omega)$ $R_{DS(ON)}@2.5\text{V}\leq 450\text{m}\Omega(\text{Typ.}230\text{m}\Omega)$ $R_{DS(ON)}@1.8\text{V}\leq 590\text{m}\Omega(\text{Typ.}330\text{m}\Omega)$

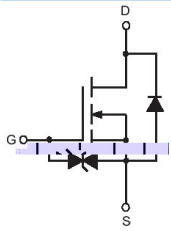
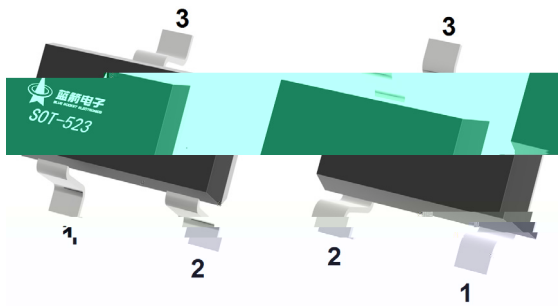
2KV ESD protected up to 2KV.

HF Product.

/ Applications

DC/DC

Load Switching, Low Current Inverters, Low Current DC/DC Converters.

/ Equivalent Circuit**/ Pinning**

PIN1 G

PIN 2 S

PIN 3 D

/ Marking

See Marking Instructions.

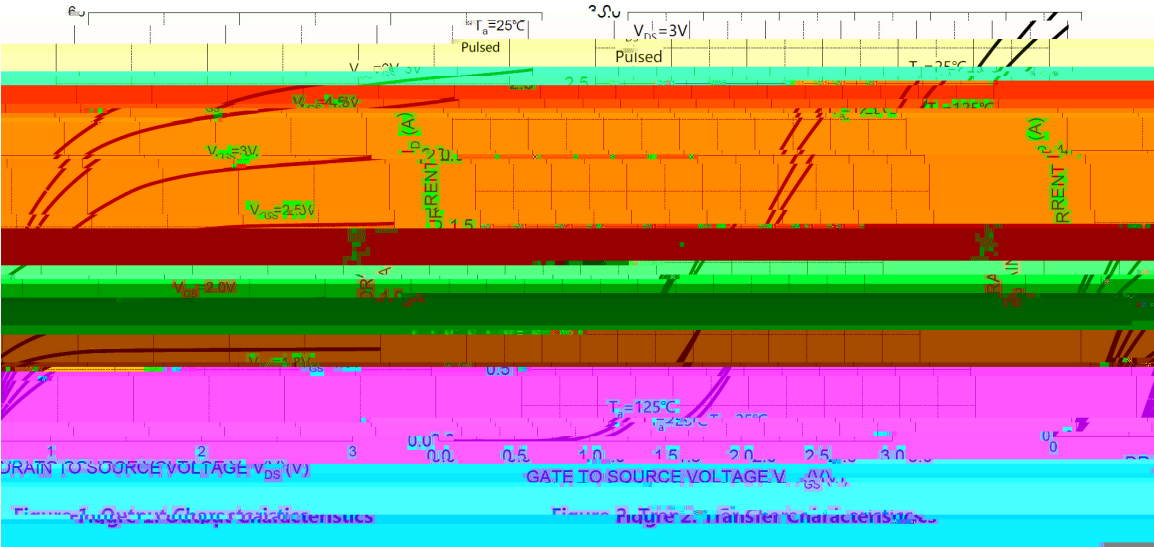
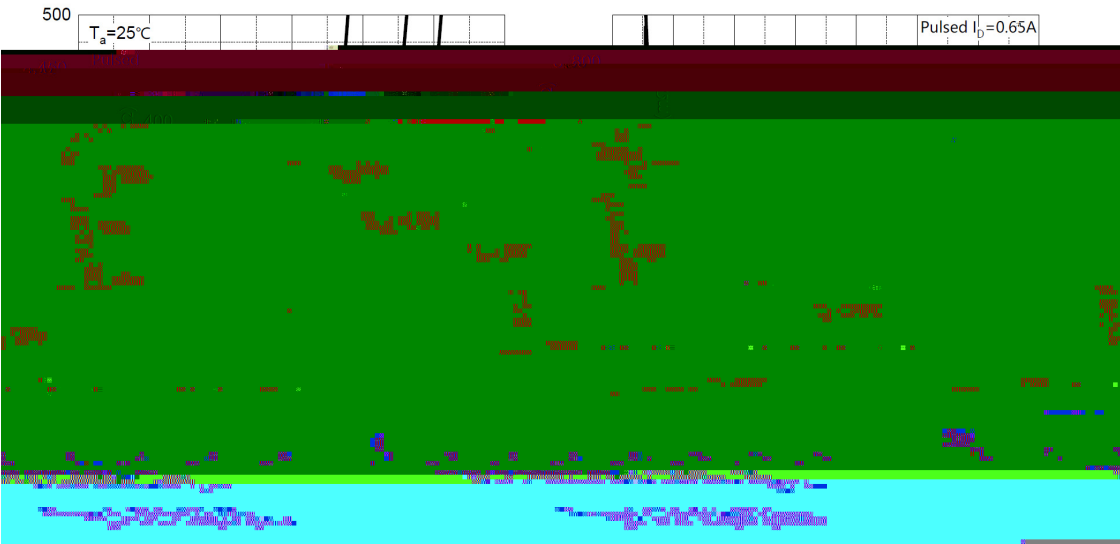
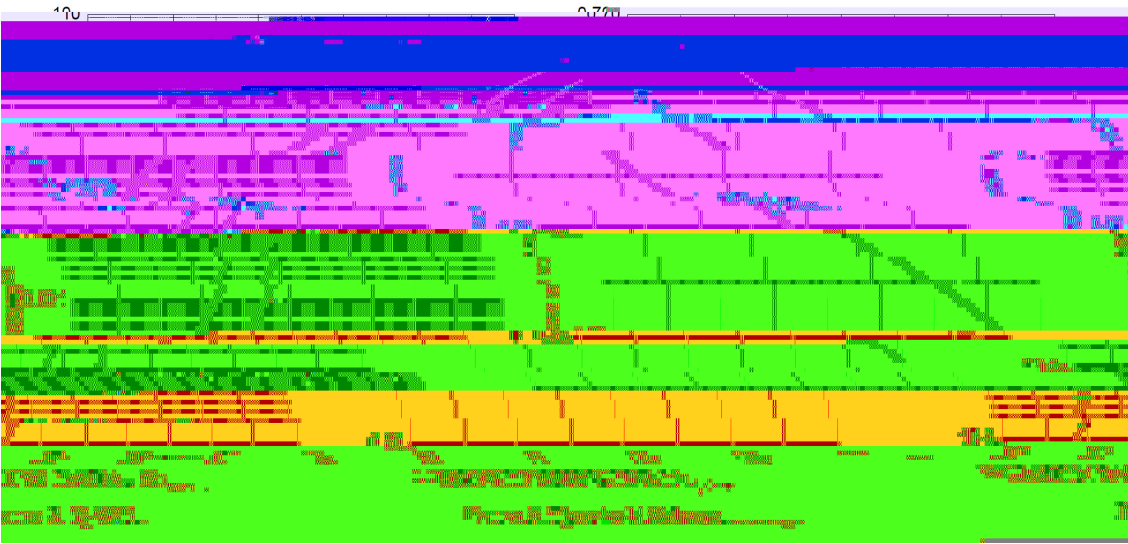
/ Absolute Maximum Ratings($T_a=25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Drain Current	I_D	0.75	A
Drain Current – Pulsed	I_{DM}	3.0	A
Power Dissipation	P_D	0.15	W
Junction Temperature Range	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	833	/W

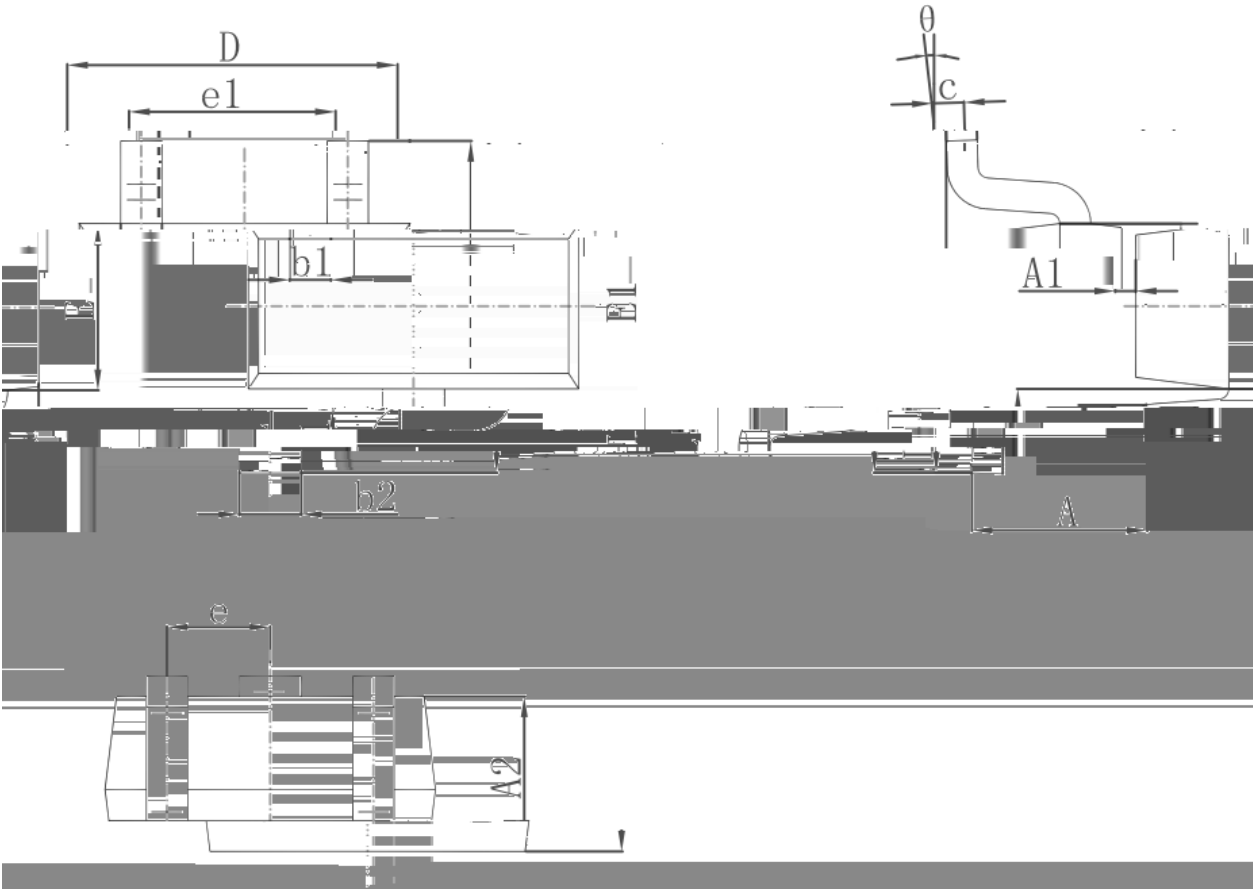
/ Electrical Characteristics($T_a=25^\circ\text{C}$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	V_{DSS}	$V_{GS}=0$ $I_D=250\mu\text{A}$	20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{GS}=0$ $V_{DS}=20\text{V}$			1	μA
Gate–Body Leakage	I_{GSS}	$V_{DS}=0\text{V}$ $V_{GS}=\pm 10\text{V}$			10	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu\text{A}$	0.4	0.7	1.0	V
Static Drain-Source On-Resistance	$R_{DS(on)(1)}$	$V_{GS}=4.5\text{V}$ $I_D=650\text{mA}$		170	380	$\text{m}\Omega$
	$R_{DS(on)(2)}$	$V_{GS}=2.5\text{V}$ $I_D=550\text{mA}$		230	450	$\text{m}\Omega$
	$R_{DS(on)(3)}$	$V_{GS}=1.8\text{V}$ $I_D=450\text{mA}$		330	590	$\text{m}\Omega$
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0\text{V}$ $I_S=150\text{mA}$			1.2	V
Input Capacitance	C_{iss}	$V_{DS}=10\text{V}$ $V_{GS}=0\text{V}$ $f=1.0\text{MHz}$		55		pF
Output Capacitance	C_{oss}			15		
Reverse Transfer Capacitance	C_{rss}			10		
Total Gate Charge	Q_g	$V_{GS}=4.5\text{V}$ $V_{DS}=10\text{V}$, $I_D=0.65\text{A}$		0.8		nC
Gate Source Charge	Q_{gs}			0.2		
Gate Drain Charge	Q_{gd}			0.01		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=4.5\text{V}$ $V_{DS}=10\text{V}$ $I_D=0.5\text{A}$ $R_{GEN}=10\Omega$		6.7		ns
Turn-On Rise Time	t_r			4.8		
Turn-Off Delay Time	$t_{d(off)}$			17.3		
Turn-Off Fall Time	t_f			7.4		

/ Electrical Characteristic Curve

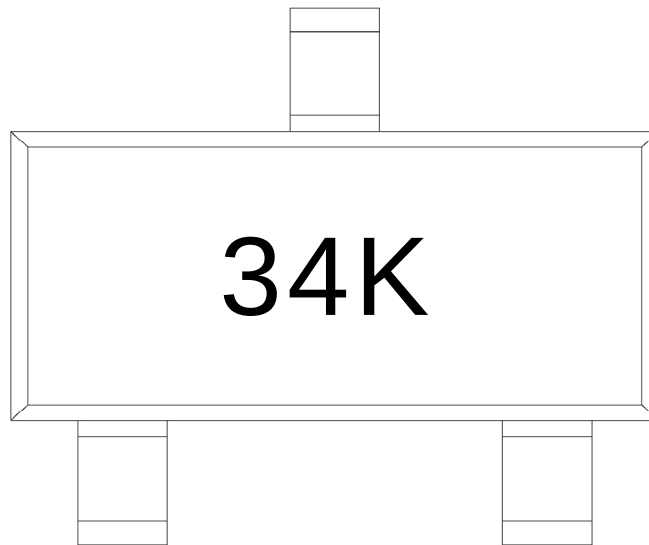


/ Package Dimensions



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	0.010
A2	0.700	0.800	0.028	0.031
b1	0.450	0.600	0.018	0.024
b2	0.250	0.300	0.010	0.012
e	0.500	0.700	0.020	0.028
e1	0.900	1.100	0.035	0.043
L	0.400	0.400	0.016	0.016
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

/ Marking Instructions



34K

Note:

34K: Product Type Code

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

- 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

260±5 10±1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL