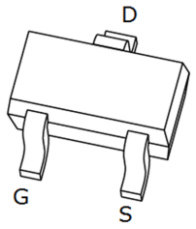
GP3134

20V N-Channel MOSFET

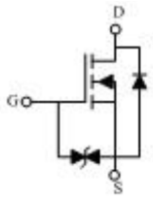
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
20V	380mΩ@4.5V	0.75A
	450mΩ@2.5V	
	800mΩ@1.8V	

SOT-523



Schematic diagram



Feature

- High-Side Switching
- Low On-Resistance
- Low Threshold
- Fast Switching Speed
- ESD Protected

Application

- Drivers:Relays, Solenoids, Lamps, Hammers,Displays, Memories
- Battery Operated Systems
- Power Supply Converter Circuits
- Load/Power Switching Cell Phones, Pagers

MARKING:

ABSOLUTE MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	0.75	A
Pulsed Drain Current (t=300μs) (1)	I_{DM}	3	A
Power Dissipation (2)	P_D	150	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	833	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise noted)

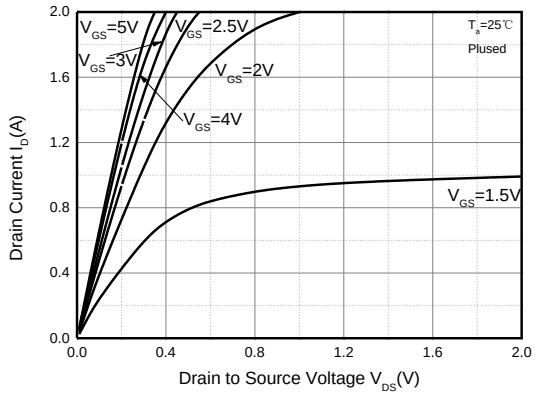
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =20V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±10V, V_{DS} = 0V			±20	μA
Gate threshold voltage(3)	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.35	0.75	1.1	V
Drain-source on-resistance(3)	$R_{DS(on)}$	V_{GS} =4.5V, I_D =650mA		190	380	mΩ
		V_{GS} =2.5V, I_D =550mA		260	450	
		V_{GS} =1.8V, I_D =450mA		390	800	
Forward tranconductance	g_{FS}	V_{DS} =10V, I_D =800mA	1			S
Dynamic characteristics(4)						
Input Capacitance	C_{iss}	V_{DS} =16V,V_{GS} =0V,f =1MHz			120	pF
Output Capacitance	C_{oss}				20	
Reverse Transfer Capacitance	C_{rss}				15	
Switching Characteristics(4)						
Turn-on delay time	$t_{d(on)}$	V_{DD}=10V,I_D=500mA, V_{GS}=4.5V,R_G=10Ω		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		
Source-Drain Diode characteristics						
Diode Forward voltage(3)	V_{DS}	I_S=0.15A, V_{GS} = 0V			1.2	V

Notes:

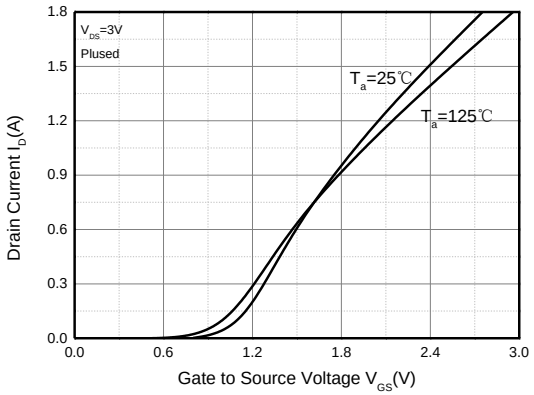
1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. This test is performed with no heat sink at Ta=25℃.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle≤0.5%.
4. These parameters have no way to verify.

Typical Electrical and Thermal Characteristics

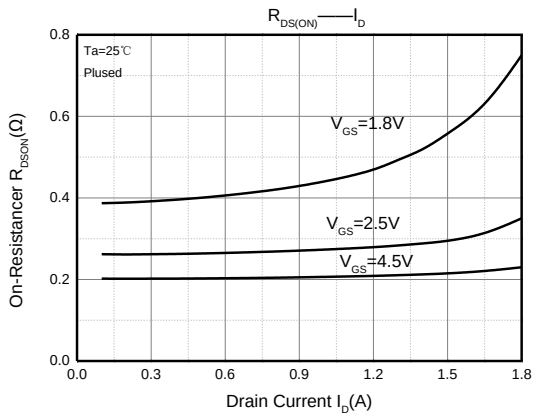
Output Characteristics



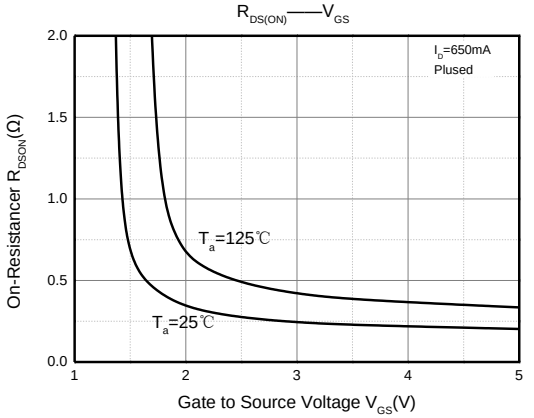
Transfer Characteristics



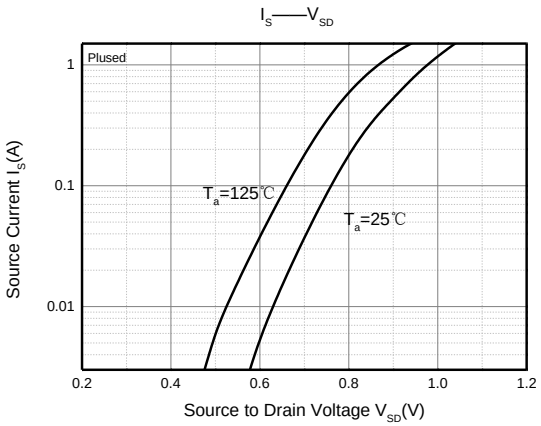
$R_{DS(ON)}$——I_D



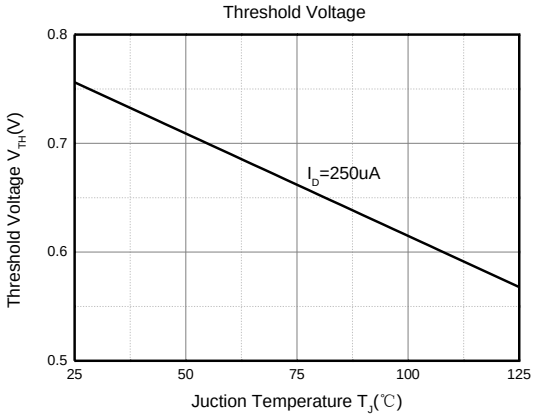
$R_{DS(ON)}$——V_{GS}



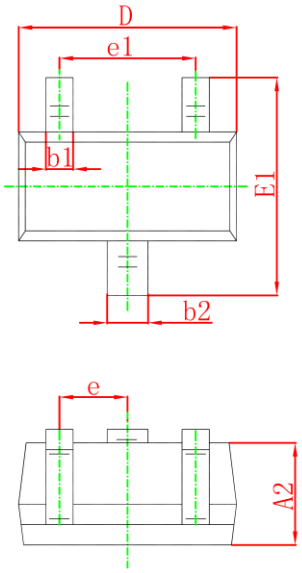
I_S——V_{SD}

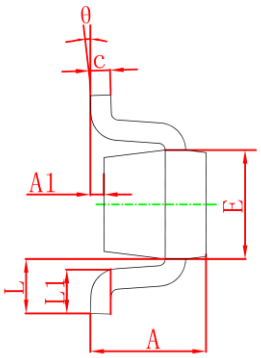


Threshold Voltage



SOT-523 Package Information

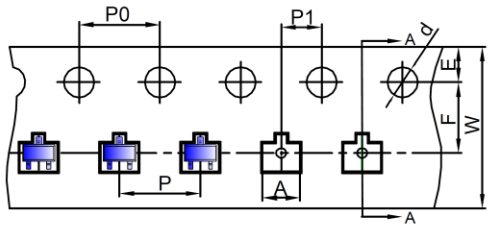




Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

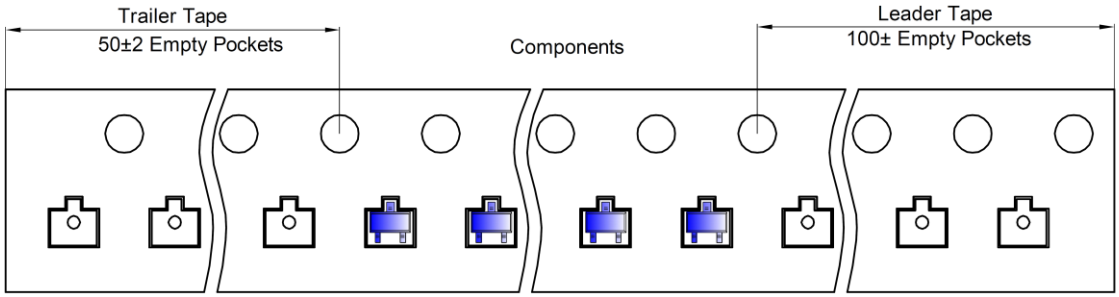
SOT-523 Tape and reel

SOT-523 Embossed Carrier Tape

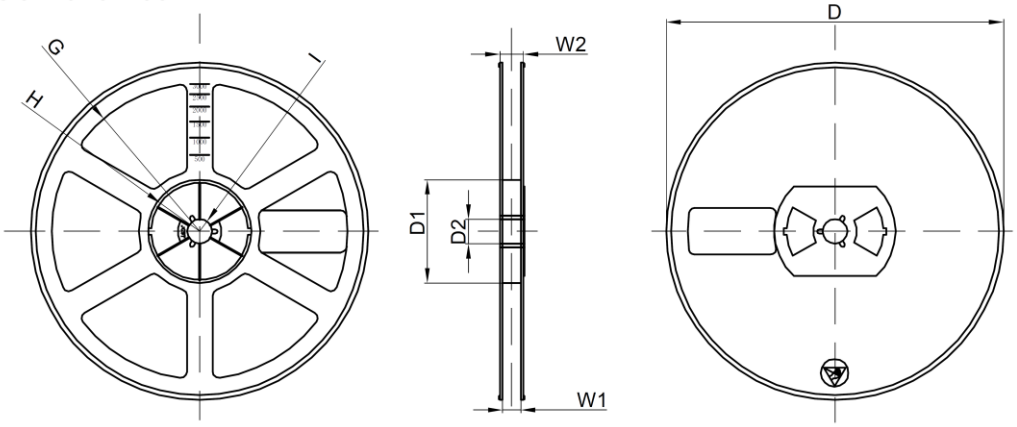


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-523	1.85	1.85	0.875	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-523 Tape Leader and Trailer



SOT-523 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	