

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	110mΩ@10V	5A

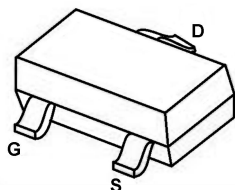
Feature

- VDS 100V
- ID 5.0A
- $R_{DS(ON)}$ (at VGS=10V) < 140 mohm

Applications

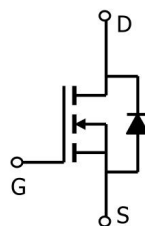
- Consumer electronic power supply
- Motor control
- Synchronous-rectification
- Isolated DC/DC convertor
- Invertors

Package

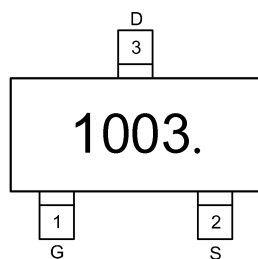


SOT-23-3L

Circuit diagram



Marking



1003. : Product code

Absolute maximum ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current – Continuous	I_D	5	A
Drain Current – Pulsed ¹	I_{DM}	20	A
Power Dissipation (TC=25°C)	P_D	1.2	W
Thermal Resistance Junction to ambient	$R_{\theta JA}$	104	°C/W
Storage Temperature Range	T_{STG}	-50 to 150	°C
Operating Junction Temperature Range	T_J	-50 to 150	°C

Electrical characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	B _{VDSS}	VGS=0V , ID=250uA	100	110	---	V
Drain-Source Leakage Current	I _{DSS}	VDS=100V , VGS=0V	---	---	1	uA
Gate Threshold Voltage	V _{GS(th)}	VGS=VDS , ID =250uA	1.2	1.6	2.0	V
Gate-Source Leakage Current	I _{GSS}	VGS= ± 20V , VDS=0V	---	---	100	nA
Static Drain-Source On-Resistance	R _{DS(ON)}	VGS=10V , ID=3A	---	110	140	mΩ
		VGS=4.5V , ID=2A	---	160	300	mΩ
Dynamic Characteristics						
Total Gate Charge	Q _g	VGS=10V,VDS=50V,ID=3.0A	---	4.3	---	nC
Gate-Source Charge	Q _{gs}		---	1.5	---	
Gate-Drain Charge	Q _{gd}		---	1.1	---	
Turn-On Delay Time	T _{d(on)}	VGS=10V,VDD=50V, ID=3.0A, RGEN=2Ω	---	14.7	---	ns
Rise Time	T _r		---	3.5	---	
Turn-Off Delay Time	T _{d(off)}		---	20.9	---	
Fall Time	T _f		---	2.7	---	
Input Capacitance	C _{iss}	VDS=50V,VGS=0V,f=1MHZ	---	206	---	pF
Output Capacitance	C _{oss}		---	29	---	
Reverse Transfer Capacitance	C _{rss}		---	1.4	---	
Drain-Source Body Diode Characteristics						
Continuous Source Current	I _s	VG=VD=0V , Force Current	---	---	3	A
Diode Forward Voltage	V _{SD}	VGS=0V , IS=3A , TJ=25℃	---	---	1.2	V

Typical Characteristics

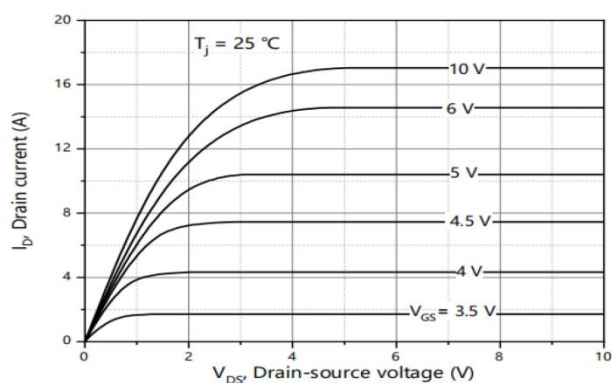


Figure1. Output Characteristics

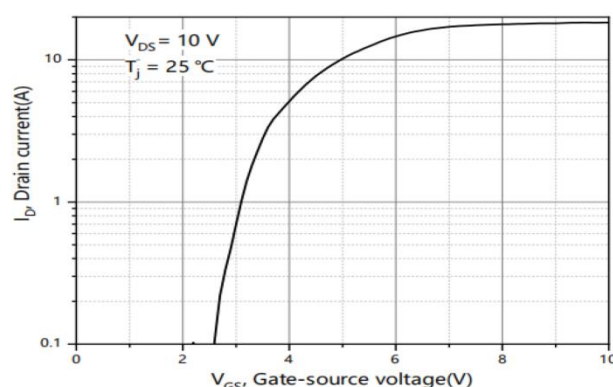


Figure2. Transfer Characteristics

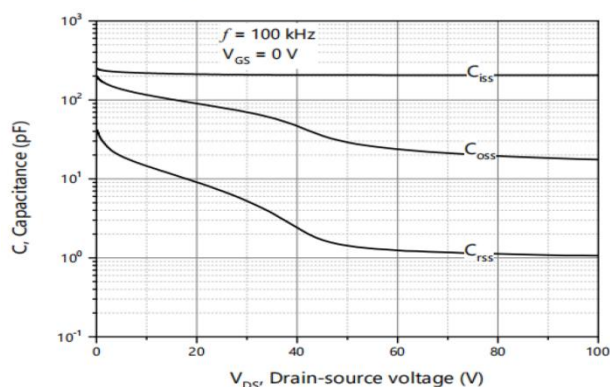


Figure3. Capacitance Characteristics

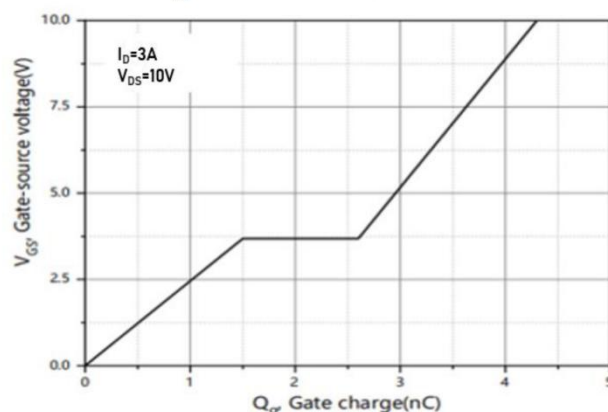


Figure4. Gate Charge

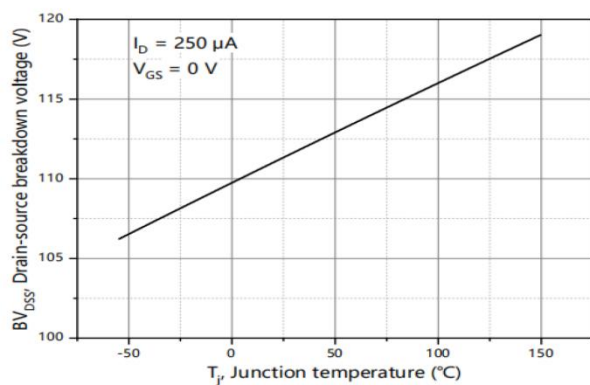


Figure5. Drain-Source breakdown voltage

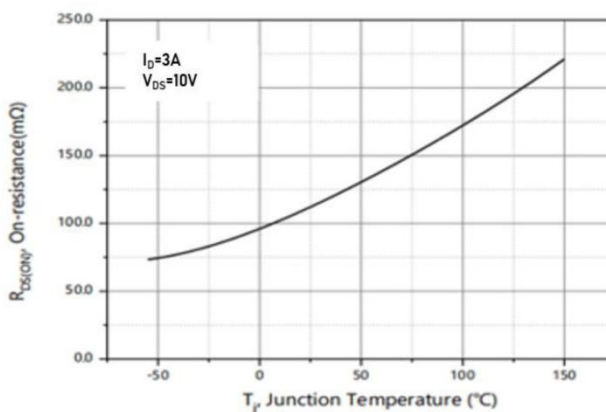


Figure6. Drain-Source on Resistance

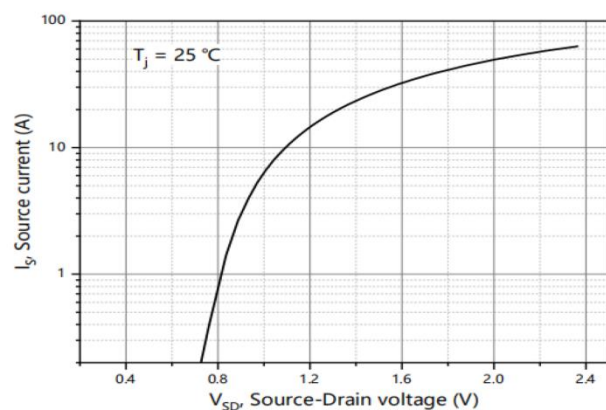


Figure7. Forward characteristic of body diode

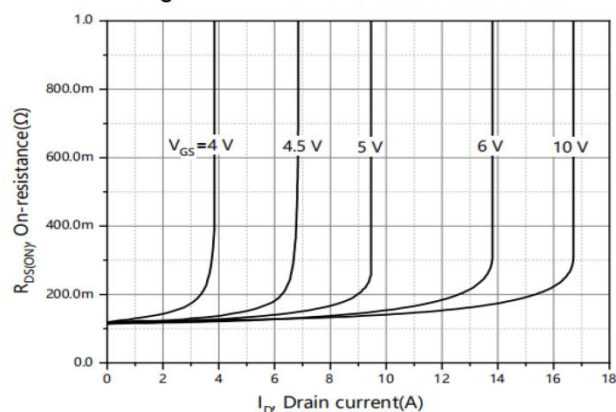


Figure8. Drain-source on-state resistance

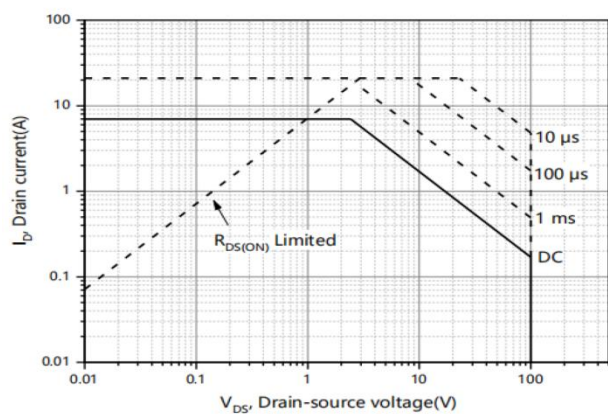


Figure9. Safe Operation Area $T_A=25\text{ }^{\circ}\text{C}$

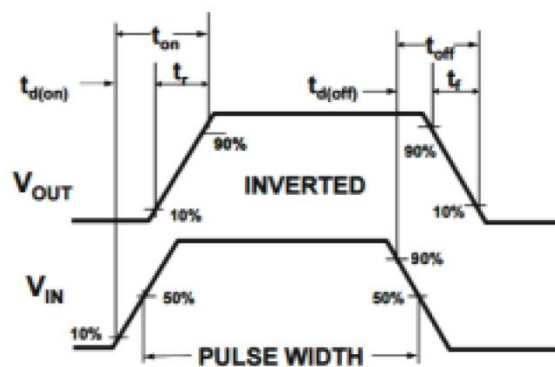
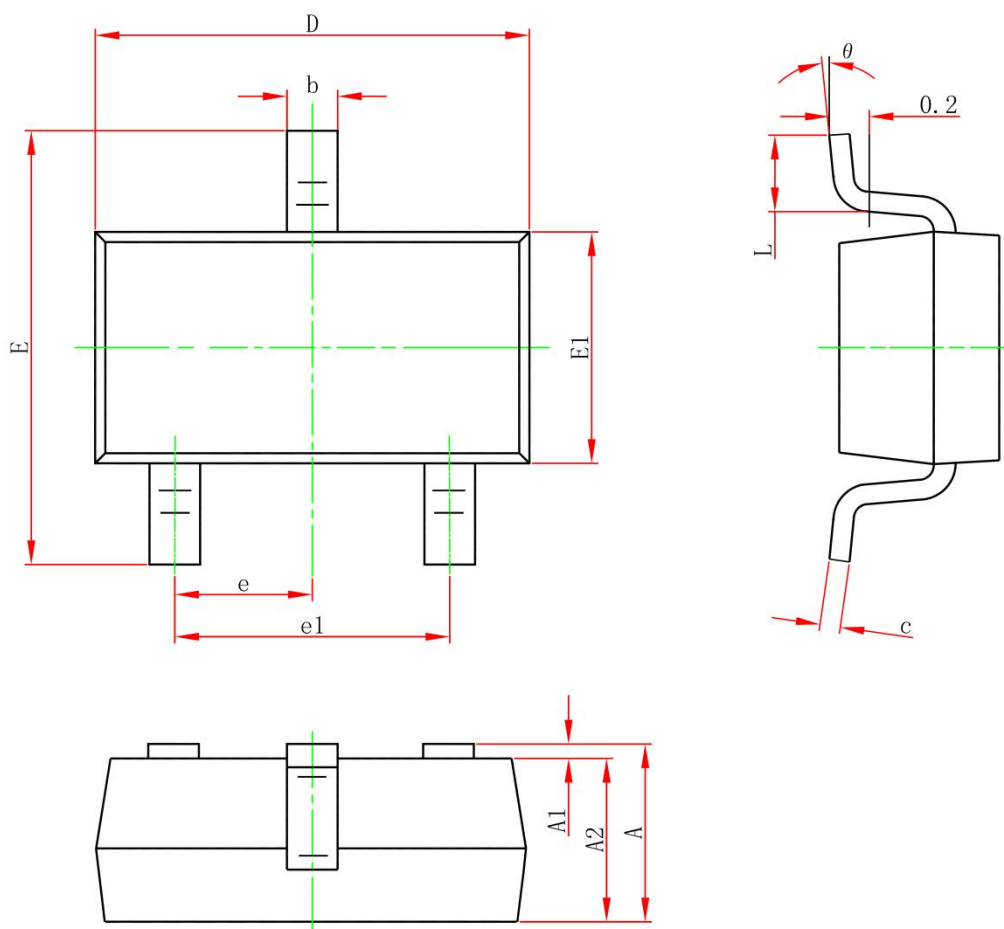


Figure10. Switching wave



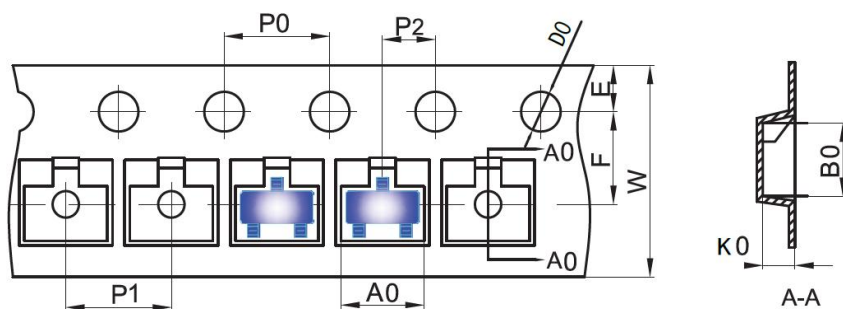
SOT-23-3L Package Information



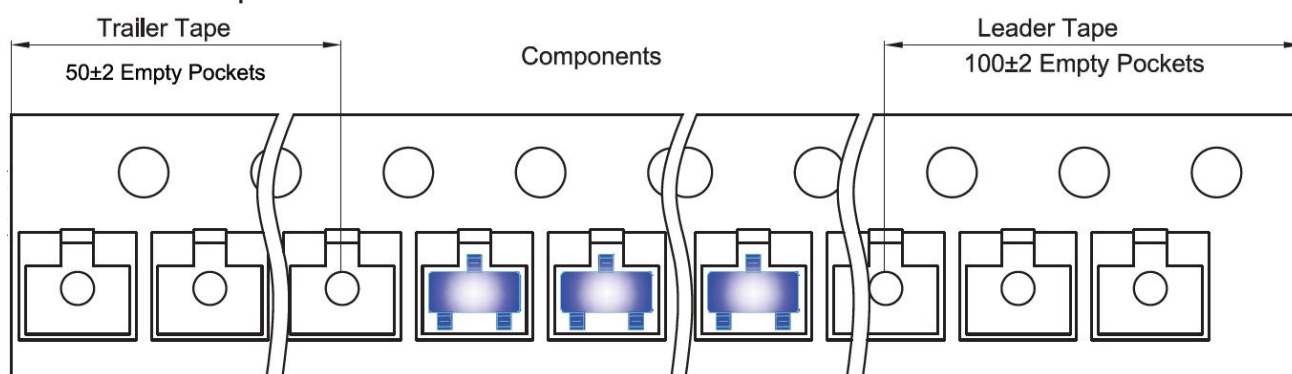
Symbol	Dimensions in millimeters	
	Min.	Max.
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.300	0.500
c	0.100	0.200
D	2.820	3.020
E1	1.500	1.700
E	2.650	2.950
e	0.950 Typ.	
e1	1.800	2.000
L	0.300	0.600
θ	0°	8°



SOT-23-3L Embossed Carrier Tape

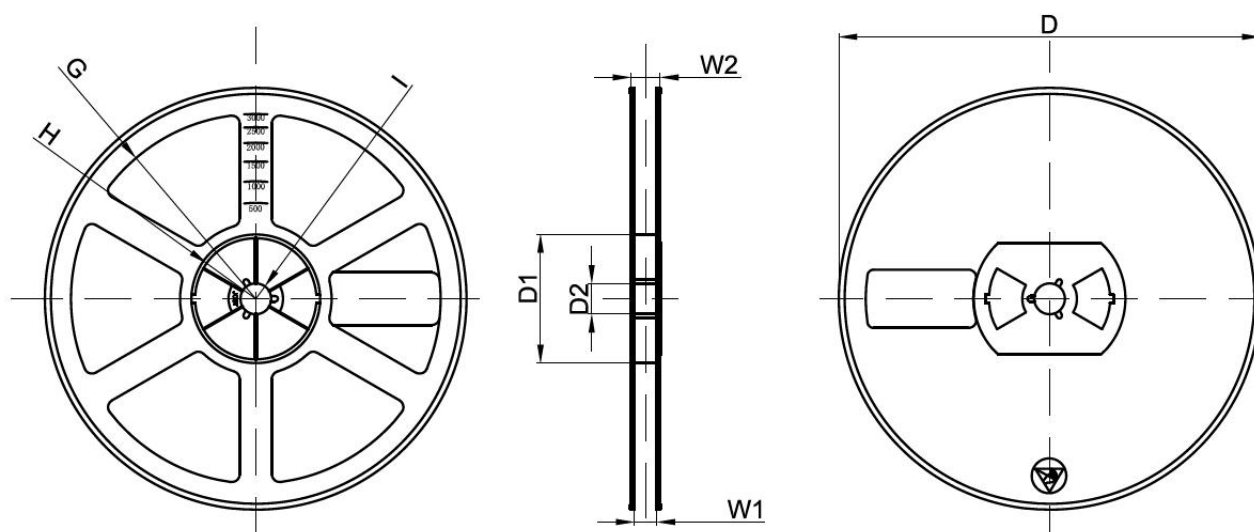


SOT-23-3L Tape Leader and Trailer



Dimensions are in millimeter										
Pkg type	A0	B0	K	D0	E	F	P0	P1	P2	W
SOT-23-3L	3.2	3.28	1.32	Ø1.55	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23-3L 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