

Product Summary

BVDSS	RDSON	ID
20V	65 mΩ	2 A

Application

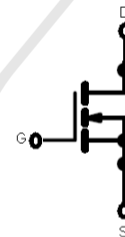
- Load/Power Switching
- Interfacing Switching
- Logic Level Shift

Package and Pin Configuration

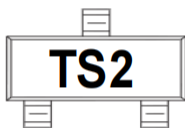
SOT-323



Circuit diagram



Marking:



Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

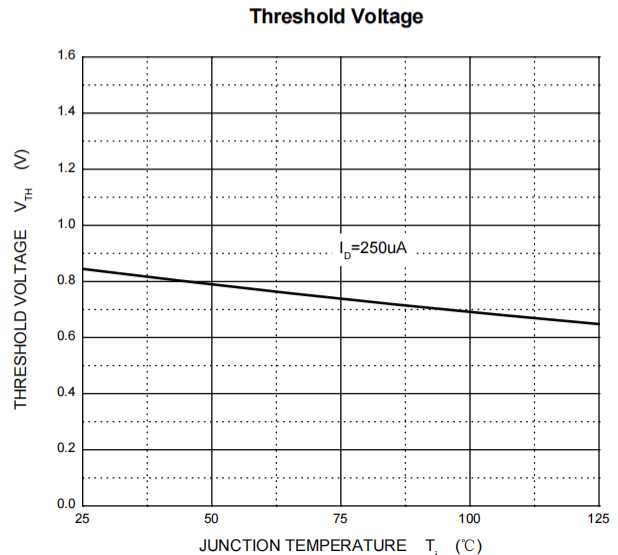
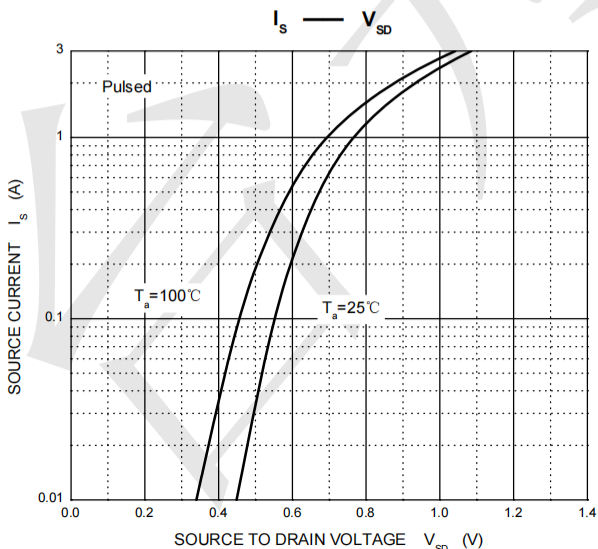
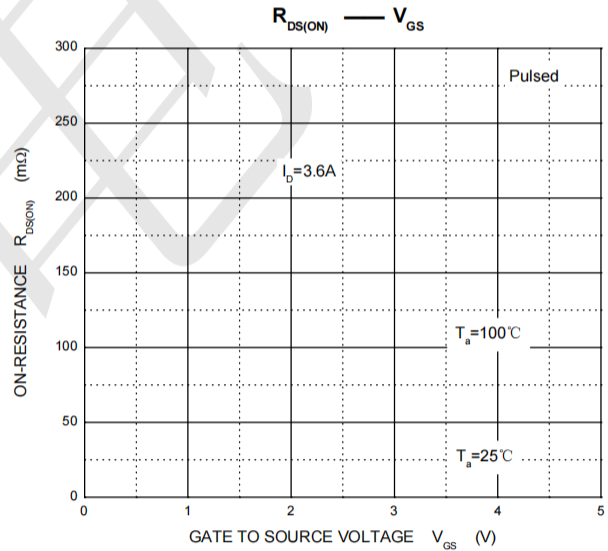
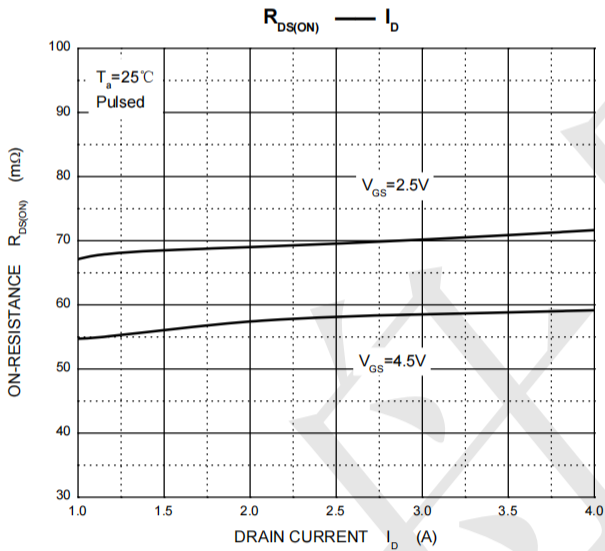
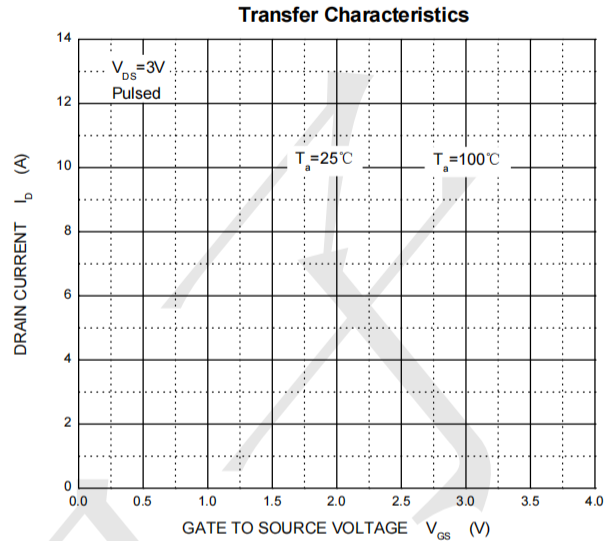
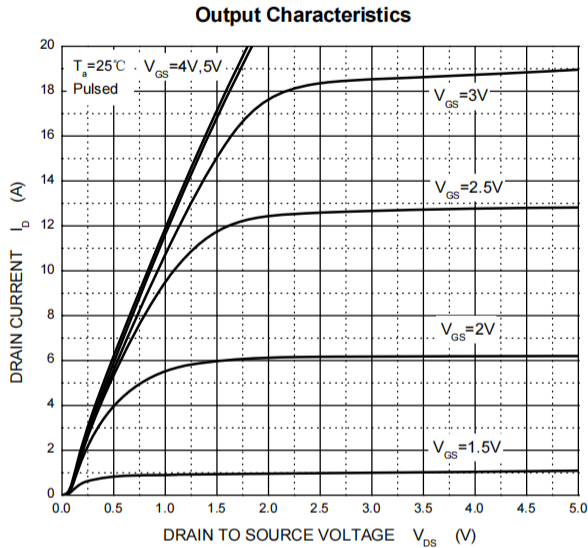
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	20	V
Gate-Source Voltage	V _{GS}	±8	
Continuous Drain Current	I _D	2.1	A
Continuous Source-Drain Current(Diode Conduction)	I _S	0.6	
Power Dissipation	P _D	0.2	W
Thermal Resistance from Junction to Ambient (t≤5s)	R _{θJA}	625	°C/W
Operating Junction	T _J	150	°C
Storage Temperature	T _{STG}	-55 ~+150	

Electrical Characteristics (T_J=25 °C, unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 10μA	20			V
Gate-threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 50μA	0.65	0.95	1.2	V
Gate-body leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±8V			±100	nA
Zero gate voltage drain current	I _{DSS}	V _{DS} = 20V, V _{GS} = 0V			1	μA
Drain-source on-resistance ¹	R _{DS(on)}	V _{GS} = 4.5V, I _D = 3.6A		0.065	0.075	Ω
		V _{GS} = 2.5V, I _D = 3.1A		0.070	0.120	
Forward transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 3.6A		8		S
Diode forward voltage	V _{SD}	I _S = 0.94A, V _{GS} = 0V		0.76	1.2	V
Dynamic Characteristics						
Total gate charge	Q _g	V _{DS} = 10V, V _{GS} = 4.5V, I _D = 3.6A		4.0	10	nC
Gate-source charge	Q _{gs}			0.65		
Gate-drain charge	Q _{gd}			1.5		
Input capacitance ²	C _{iss}	V _{DS} = 10V, V _{GS} = 0V, f = 1MHz		300		pF
Output capacitance ²	C _{oss}			120		
Reverse transfer capacitance ²	C _{rss}			80		
Switching Characteristics²						
Turn-on delay time	t _{d(on)}	V _{DD} = 10V, R _L = 5.5Ω, I _D ≈ 3.6A, V _{GEN} = 4.5V, R _g = 6Ω		7	15	ns
Rise time	t _r			55	80	
Turn-off delay time	t _{d(off)}			16	60	
Fall time	t _f			10	25	

0.120

Typical Electrical and Thermal Characteristics





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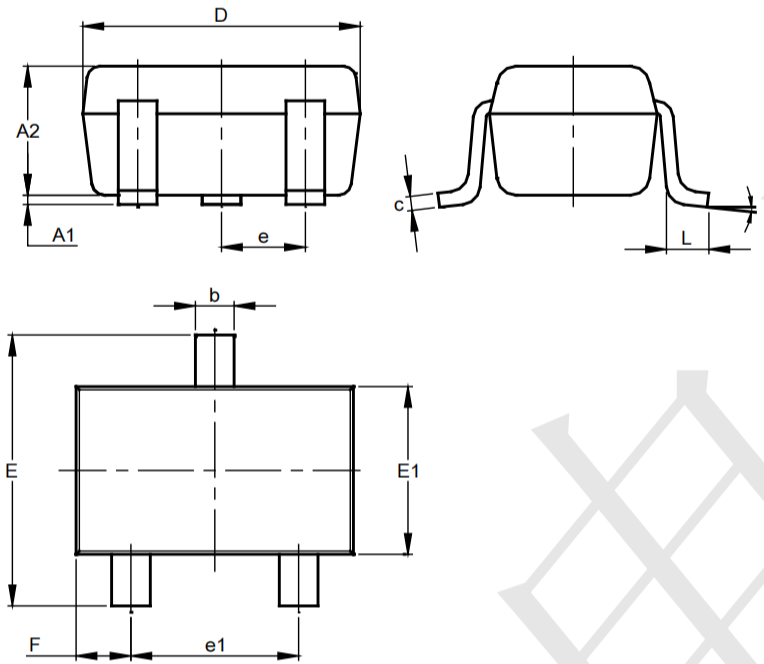
—台丹电子—

TPM2102NLC3

N-Channel Enhancement Mode MOSFET

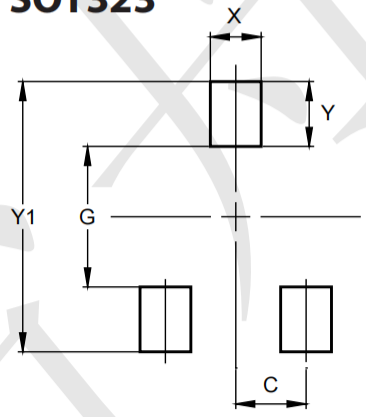
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Outline Drawing - SOT323(SC70-3)



SOT323			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.25	0.40	0.30
c	0.10	0.18	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
e1	1.20	1.40	1.30
F	0.375	0.475	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Land Pattern - SOT323



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.470
Y	0.600
Y1	2.500

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