Single N-Channel, 20V, 2.1A, Power MOSFET

Features

- ✧ Trench Technology
- ✧ Supper high density cell design
- ✧ Excellent on resistance
- ✧ Extremely Low Threshold Voltage
- ✧ Small package SOT-323

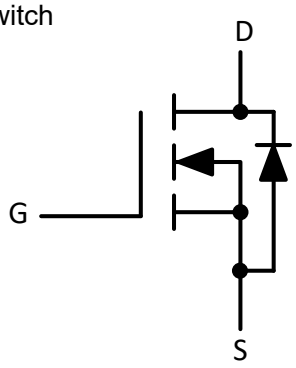
V_{DS} (V)	Max $R_{DS(on)}$ (mΩ)
20	68@V_{GS}=4.5V
	115@V_{GS}=2.5V

Applications

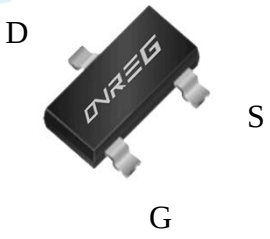
- ✧ High current load applications
- ✧ Load switch for portable devices
- ✧ Battery Switch

Mechanical Data

- ✧ UL Flame Rating : UL94V-0
- ✧ RoHS/WEEE Compliant



Circuit Diagram



SOT-323

Absolute Maximum Rating at T_A = 25 °C, unless otherwise specified

Parameter	Symbols	Value	Units
Drain-Source Voltage	VDS	20	V
Gate-Source Voltage	VGS	±8	V
Continuous Drain Current	ID	2.1	A
Continuous Source-Drain Current(Diode Conduction)	IS	0.6	
Power Dissipation	PD	200	mW
Junction Temperature	Tj	150	℃
Storage Temperature	Tstg	-55-+150	℃
Thermal Resistance from Junction to Ambient (t≤5s)	RθJA	625	℃/W

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Electrical Characteristics at T_A = 25 °C, unless otherwise specified

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V(BR)DSS	VGS=0V, ID=10uA	20			V
Zero Gate Voltage Drain current	IDSS	VDS=20V, VGS=0V			1	uA
Gate-body Leakage	IGSS	VDS=±8V, VDS=0V			±100	nA
Drain-Source On-Resistance (1)	RDS(ON)	VGS=2.5V, ID=3.1A		70	115	mΩ
		VGS=4.5V, ID=3.6A		59	68	
Forward trans conductance (1)	gfs	VDS=5V, ID=3.6A		8		S
Gate-Threshold voltage*	VGS (th)	VDS=VGS, ID=50uA	0.65	0.95	1.2	V
Diode forward voltage	VSD	IS=0.94A,VGS=0V		0.76	1.2	V
Dynamic Characteristics						
Input capacitance(2)	Ciss	VDS=10V, VGS=0V,f=1MHz		300		pF
Output capacitance(2)	Coss			120		
Reverse Transfer capacitance(2)	Crss			80		
Total gate charge	Qg	VDS=10V, VGS=4.5V, ID=3.6A		4.0	10	nC
Gate-source charge	Qgs			0.65		nC
Gate-drain charge	Qgd			1.5		nC
Switching characteristics(2)						
Turn-on Time	td(on)	VGEN=4.5V, RL=5.5Ω,ID≈3.6A VDD=10V, RGEN=6Ω		7	15	ns
Rise time	tr			55	80	
Turn-off Time	td(off)			16	60	
Fall time	tf			10	25	

Notes :

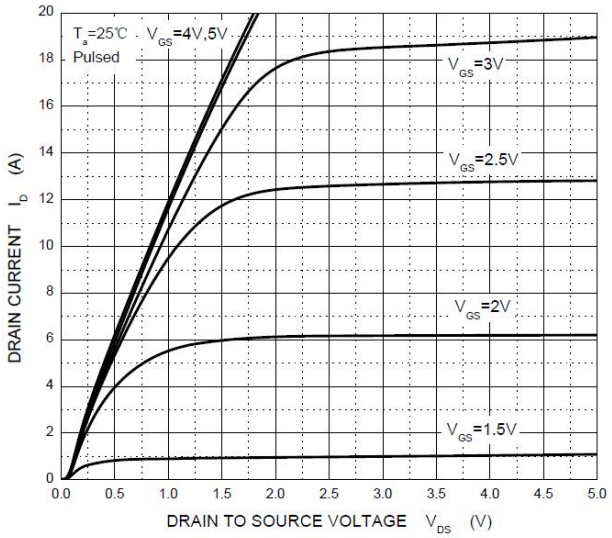
a. Pulse Test: Pulse Width ≤300us, duty cycle≤2%.

b. These parameters have no way to verify.

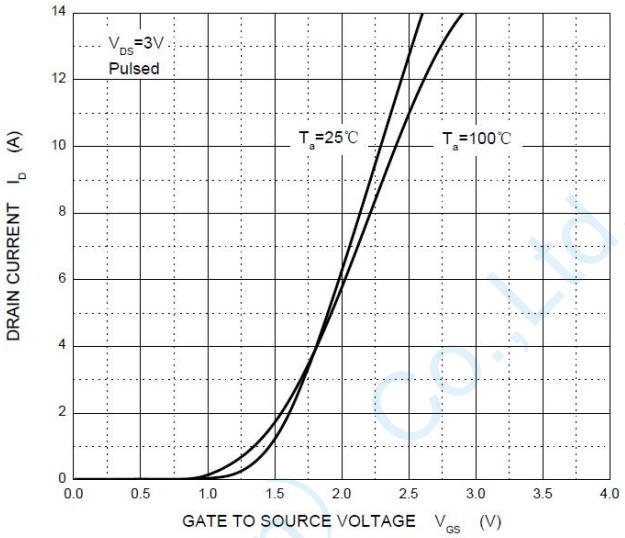
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Typical Characteristics at T_A = 25 °C, unless otherwise specified

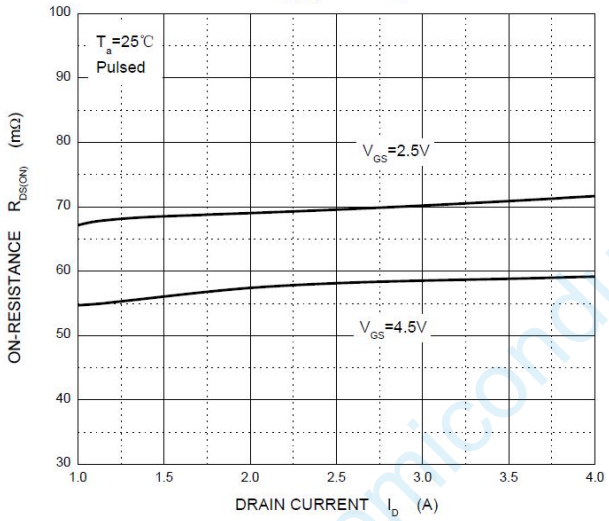
Output Characteristics



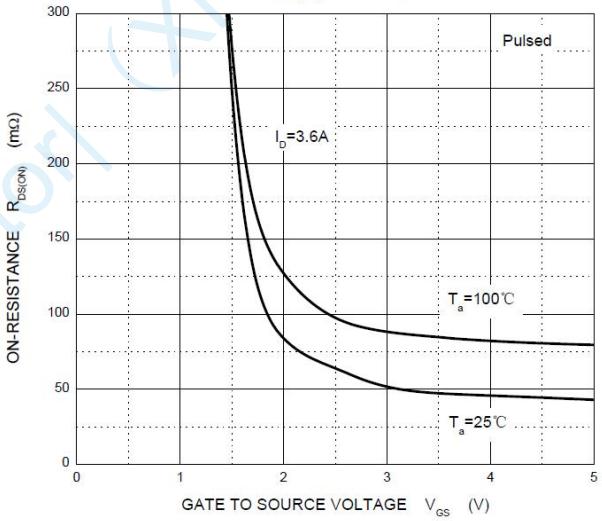
Transfer Characteristics



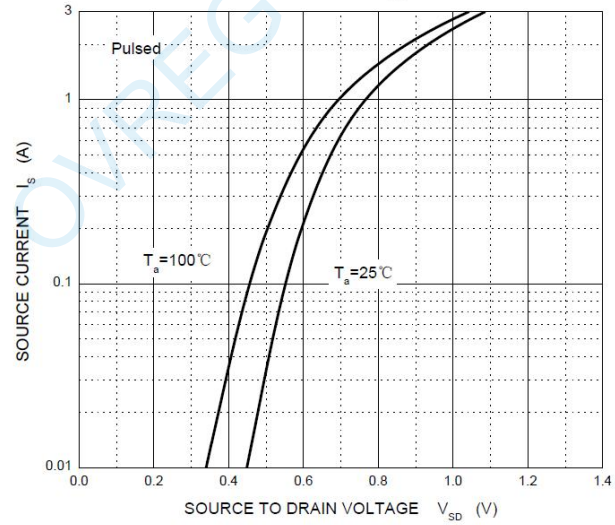
$R_{DS(ON)}$ —— I_D



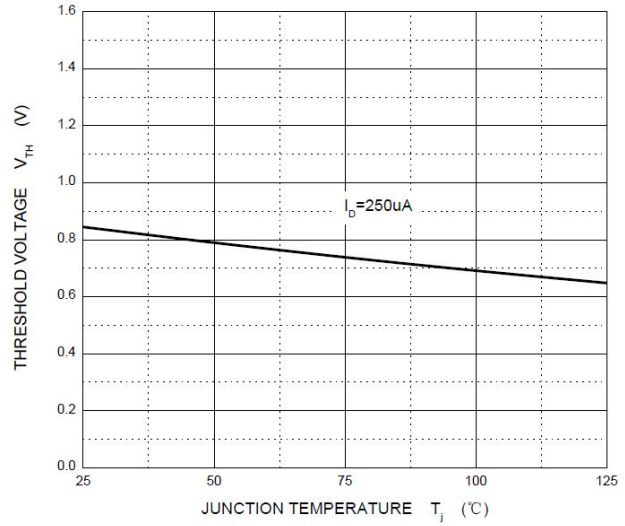
$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}

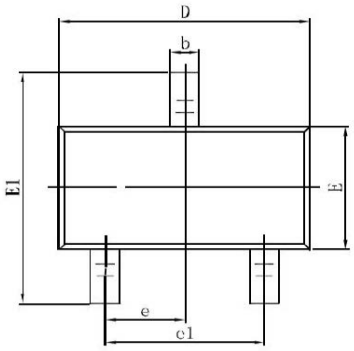


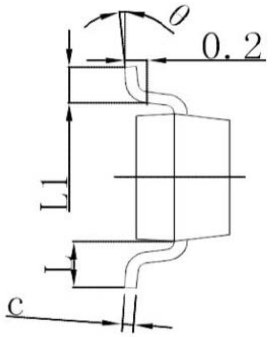
Threshold Voltage

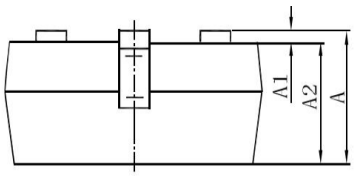


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Package information

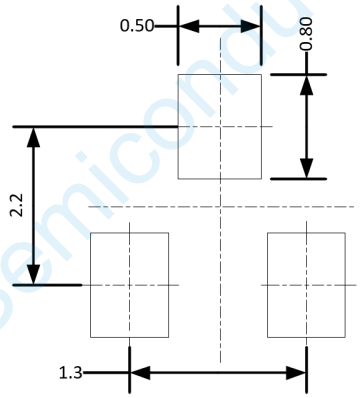






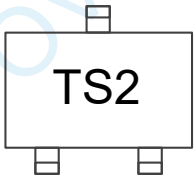
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

Recommend PCB Layout



Note:
1.Controlling dimension:In millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

Marking



Ordering Information

Part number	Material	Type	Reel size	MOQ	MOQ/internal box	MOQ/carton
OVM20N68T3	GREEN	T/R	7 inch	3k/reel	10reel= 30k/box	4boxes=120k/carton

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