Single P-Channel, -20V, -0.66A, MOSFET

Features

V_{DS} (V)	Max. $R_{DS(on)}$ (mΩ)
-20	640 @ V_{GS}=-4.5V
	950 @ V_{GS}=-2.5V
	1950 @ V_{GS}=-1.8V

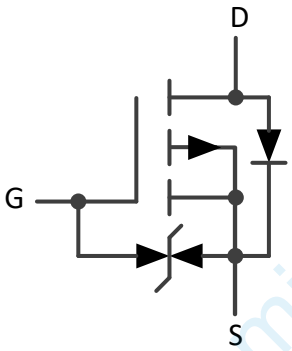
- ✧ Trench Technology
- ✧ Supper high density cell design
- ✧ Excellent ON resistance
- ✧ Extremely Low Threshold Voltage
- ✧ Small package SOT-723
- ✧ Compliance with RoHS requirements and Halogen Free

Applications

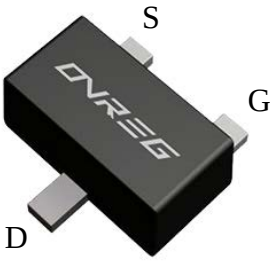
- ✧ Interfacing Switching
- ✧ Load/Power Switching for portable device

Mechanical Data

- ✧ UL Flame Rating : UL94V-0
- ✧ Reel Size : 7 inch



Circuit Diagram



SOT-723

Absolute Maximum Rating at T_A = 25℃, unless otherwise specified

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	-20	V
V_{GS}	Gate-Source Voltage	±12	V
I_D	Drain Current-Continuous (Note 1)	-0.66	A
I_{DM}	Pulsed Drain Current (t_p =10us)	-1.2	A
P_D	Power Dissipation (Note1)	150	mW
$R_{\Theta JA}$	Thermal Resistance From Junction To Ambient	833	℃/W
Tj	Junction Temperature	150	℃
Tstg	Storage Temperature	-55～+150	℃

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Electronics Characteristics (Ta=25°C, unless otherwise noted)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=-250μA	-20			V
$V_{GS(th)}$	Gate-Threshold Voltage (Note2)	V_{DS}=V_{GS}, I_D=-250μA	-0.35	-0.45	-1.1	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-20V, V_{GS}=0V			-1	uA
I_{GSS}	Gate-Body Leakage Current	V_{GS} =±8V, V_{DS}=0V			±10	uA
$R_{DS(on)}$	Drain-Source On-Resistance (Note2)	V_{GS}=-4.5V, I_D=-0.55A		530	640	mΩ
		V_{GS}=-2.5V, I_D=-0.45A		730	950	mΩ
		V_{GS}=-1.8V, I_D=-0.35A		1300	1950	mΩ
g_{FS}	Forward Tran conductance (Note2)	V_{DS} =-10V, I_D =-0.54A		1.2		S
V_{SD}	Diode Forward Voltage	I_S=-0.5A,V_{GS}=0V			-1.2	V

Dynamic Characteristics(Note4)

Ciss	Input Capacitance	V_{DS}=-16V,V_{GS}=0V, f=1MHz		113	170	pF
Coss	Output Capacitance			15	25	
Crss	Reverse Transfer Capacitance			9	15	

SWITCHING CHARACTERISTICS （Note4）

td(on)	Turn-on Delay Time（Note3）	V_{GS}=-4.5V, V_{DS}=-10V, I_D=-200mA, R_{GEN}=10Ω		9		nS
tr	Turn-on Rise Time （Note3）			5.8		
td(off)	Turn-off Delay Time（Note3）			32.7		
t_f	Turn-off Fall Time （Note3）			20.3		

Notes:

1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse Test: Pulse Width=300μs, Duty Cycle=2%.
3. Switching characteristics are independent of operating junction temperatures.
4. Guaranteed by design, not subject to producing.

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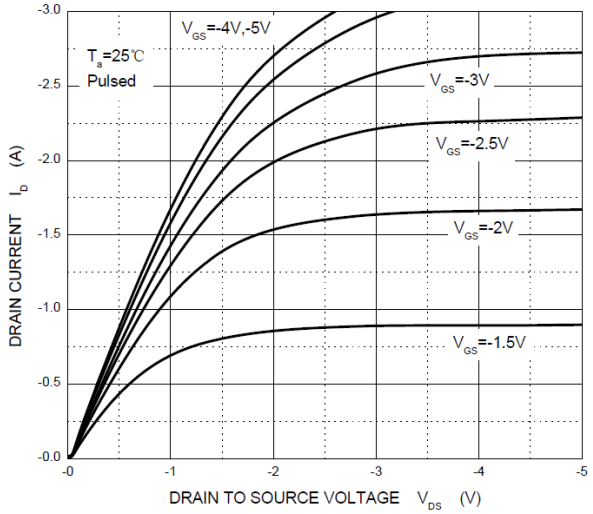
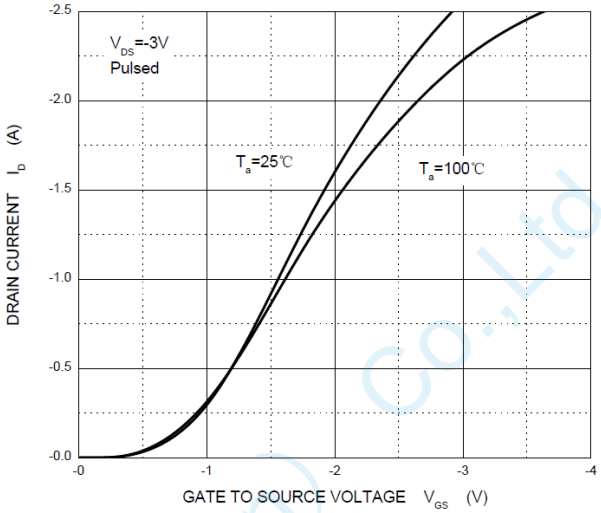
Electronics Characteristics (Ta=25°C, unless otherwise noted)

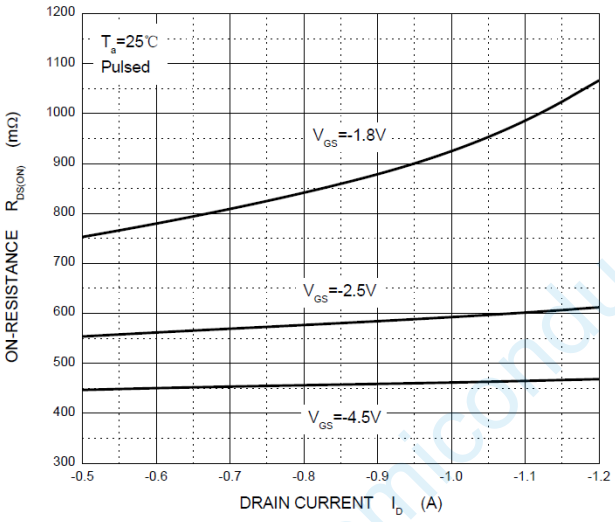
Output Characteristics



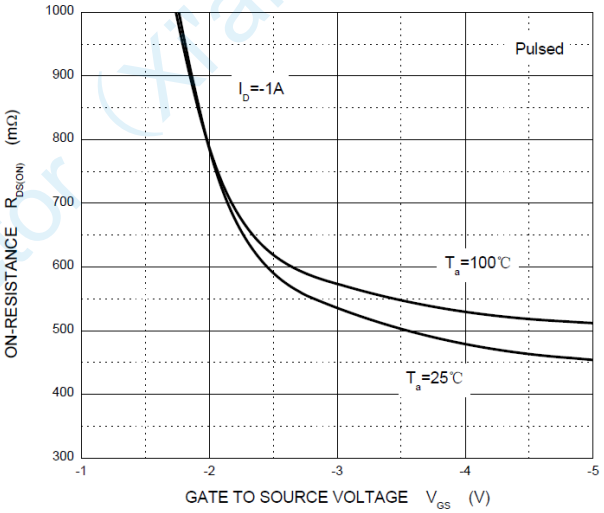
Transfer Characteristics



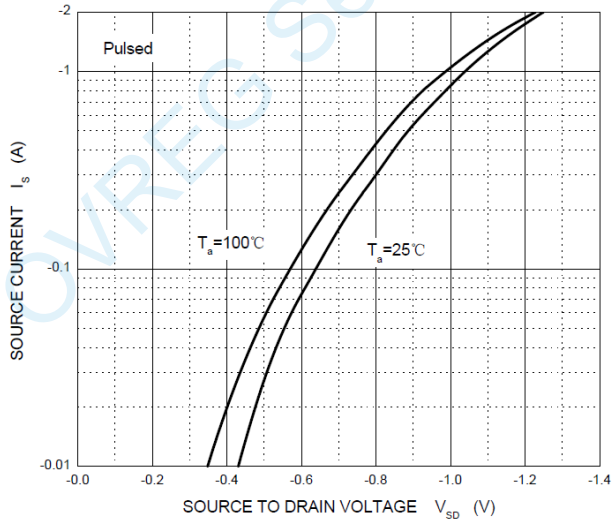
$R_{DS(ON)}$ — I_D



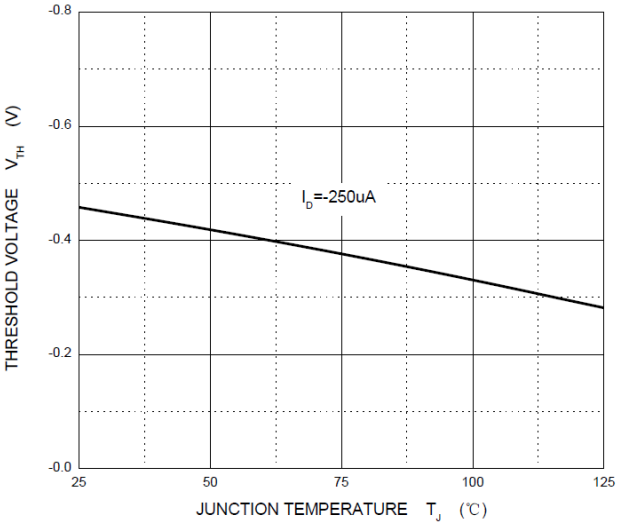
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage



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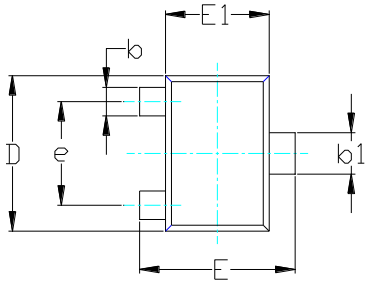
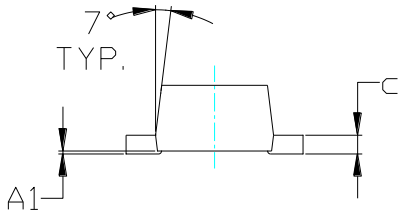
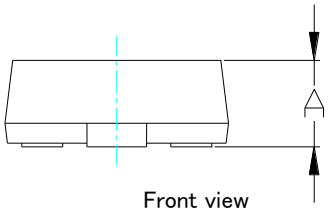
Package information



Top view



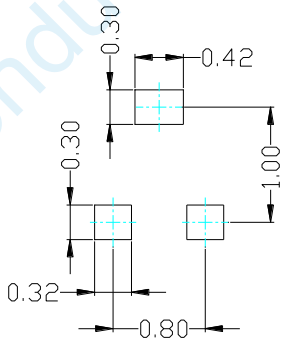
Side view



Front view

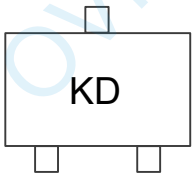
SYMBOL	DIMENSIONS IN MILLIMETER	
	MIN	MAX
A	0.430	0.500
A1	0.000	0.050
b	0.170	0.270
b1	0.270	0.370
c	0.080	0.150
D	1.150	1.250
E	1.150	1.250
E1	0.750	0.850
e	0.800 TYP.	
θ	0°	7°

Recommend PCB Layout



Notes: This PCB Layout Is For Reference Purposes Only

Marking



Ordering Information

Part number	Material	Type	Reel size	MOQ	MOQ/internal box	MOQ/carton
OVM20P640T7	GREEN	T/R	7 inch	8k/reel	10reel= 80k/box	4boxes=320k/carton

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