

MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

WNM2021-3/MS

Product specification

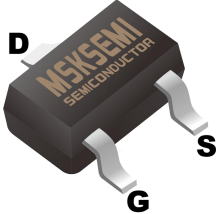
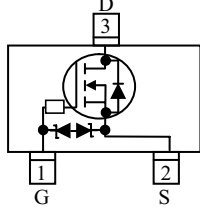
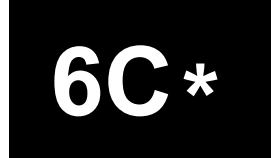
FEATURES

- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- ESD Protected:1000V

MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit
Drain–Source Voltage	VDSS	20	V
Drain–Gate Voltage (RGS = 1.0 MΩ)	VDGR	6	V
Drain Current	ID	±615	mA
– Continuous TC = 25 °C		± 575	
TC = 100°C		±800	
– Pulsed (Note 1)	IDM		
Gate–Source Voltage			
– Continuous	VGS	±20	V
– Non-repetitive (tp≤50μs)	VGSM	±40	V

Reference News

PACKAGE OUTLINE	PIN Configuration	Marking
 <p>SOT-323</p>		

THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation, FR-5 Board (Note 2) @ TA = 25°C	PD	225	mW
Derate above 25° C		1.8	mW/°C
Thermal Resistance, Junction– to– Ambient(Note 2)	RθJA	556	°C/W
Junction and Storage temperature	TJ,Tstg	–55~ +15 0	°C

1. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0% .

2. FR-5 = 1.0×0.75×0.062 in.

ELECTRICAL CHARACTERISTICS (Ta= 25°C)

OFF CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Drain–Source Breakdown Voltage (VGS = 0, ID = 10μA)	VBRDSS	20	-	-	V
Zero Gate Voltage Drain Current TJ = 25 °C (VGS = 0, VDS = 2 0 V) TJ = 125°C	IDSS	-	-	1.0	μA
		-	-	500	
Gate–Body Leakage Current, Forward (VGS = 20 V)	IGSSF	-	-	1.0	μA
Gate–Body Leakage Current, Reverse (VGS = - 20 V)	IGSSR	-	-	-1.0	μA

ON CHARACTERISTICS (Note 3)

Gate Threshold Voltage (VDS = VGS, ID = 250μA)	VGS(th)	1.0	1.6	2.5	V
On–State Drain Current (VDS ≥ 2.0 VDS(on), VGS = 10 V)	ID(on)	500	-	-	mA
Static Drain–Source On–State Voltage (VGS = 10 V, ID = 500 mA) (VGS = 5.0 V, ID = 50 mA)	VDS(on)	-	-	3.75 0.375	V
		-	-	-	
Static Drain–Source On–State Resistance (VGS = 10 V, ID = 500 mA) (VGS = 5.0 V, ID = 50 mA)	RDS(on)	-	-	7.5 13.5	Ohms
		-	-	7.5 13.5	
		-	-	-	
		-	-	-	
Forward Transconductance (VDS ≥ 2.0 VDS(on), ID = 200 mA)	gfs	80	-	-	mmhos

DYNAMIC CHARACTERISTICS

Input Capacitance (VDS = 25 V, VGS = 0, f = 1.0 MHz)	Ciss	-	17	50	pF
Output Capacitance (VDS = 25 V, VGS = 0, f = 1.0 MHz)	Coss	-	10	25	pF
Reverse Transfer Capacitance (VDS = 25 V, VGS = 0, f = 1.0 MHz)	Crss	-	2.5	5.0	pF

WITCHING CHARACTERISTICS

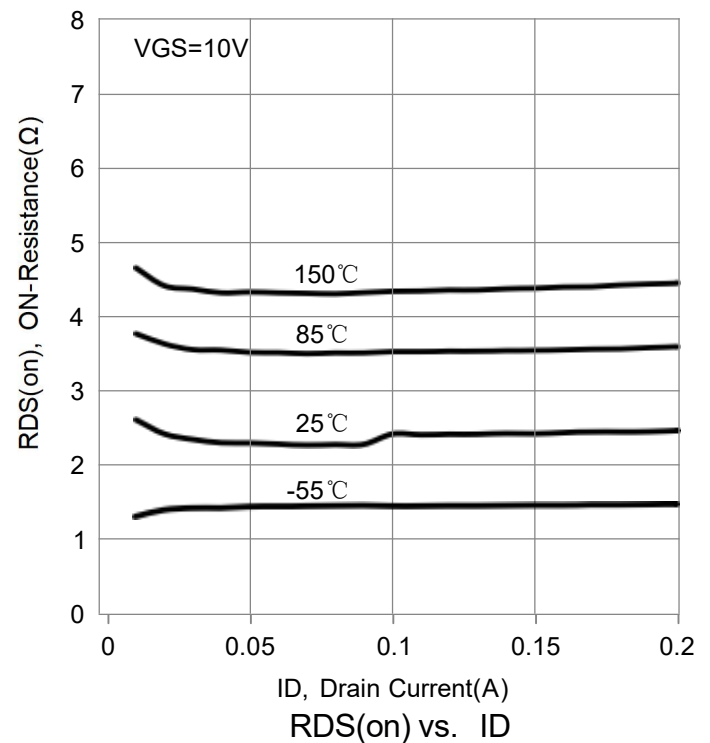
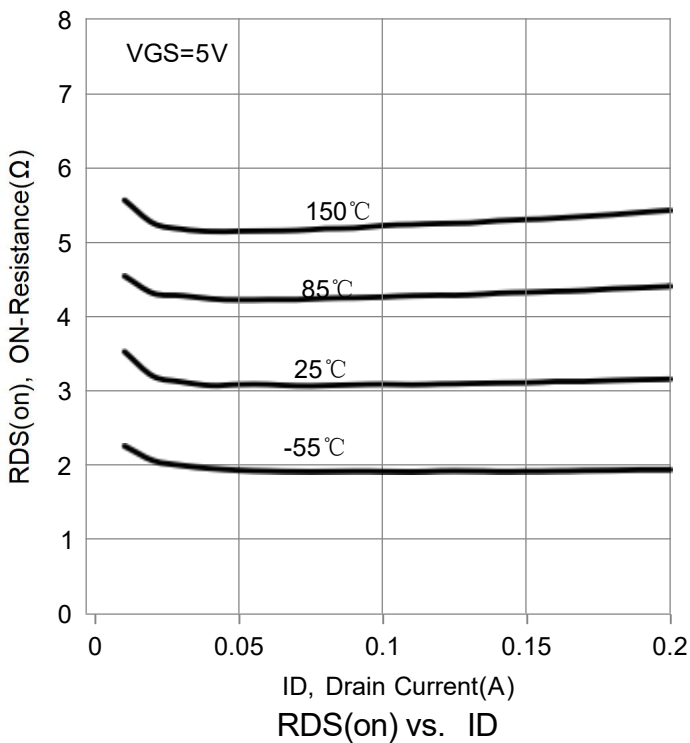
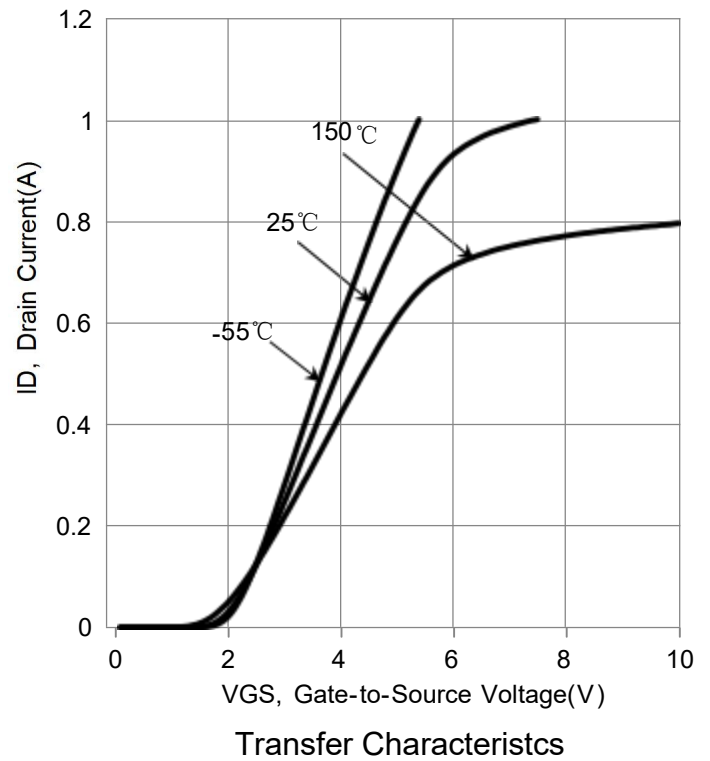
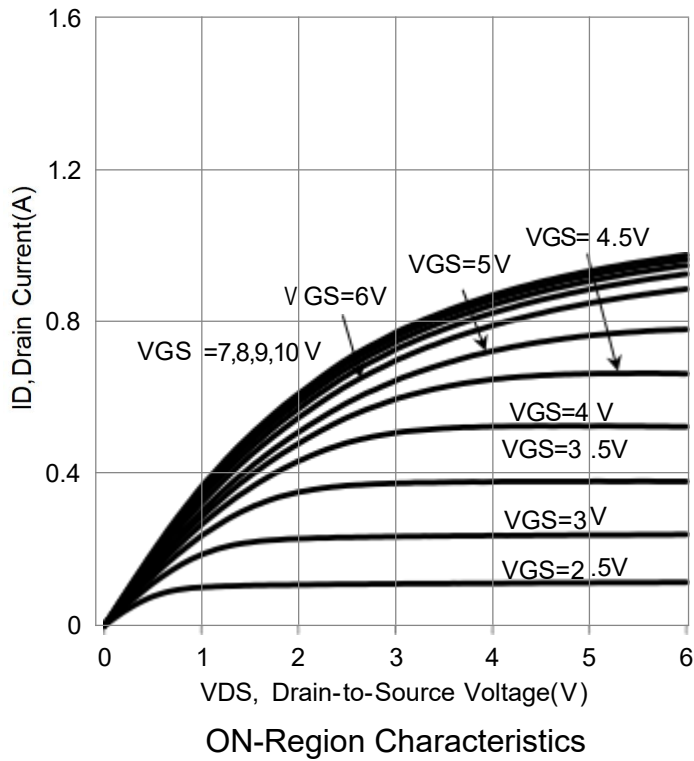
Turn-On Delay Time	(VDD = 25 V, ID = 500 mA, RG = 25Ω, RL = 50 Ω, Vgen = 10 V)	td(on)	-	7	20	ns
Turn-Off Delay Time		td(off)	-	11	40	

BODY–DRAIN DIODE RATINGS

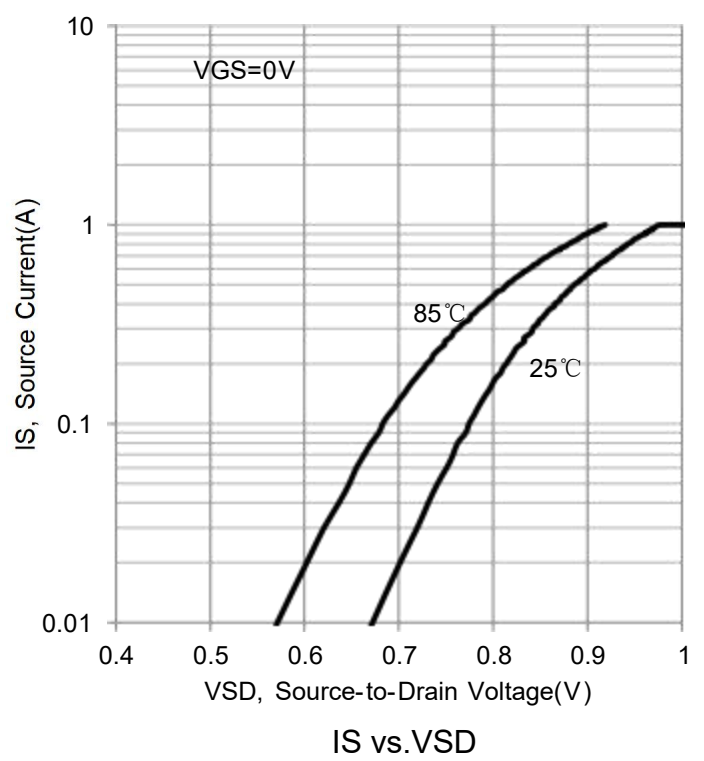
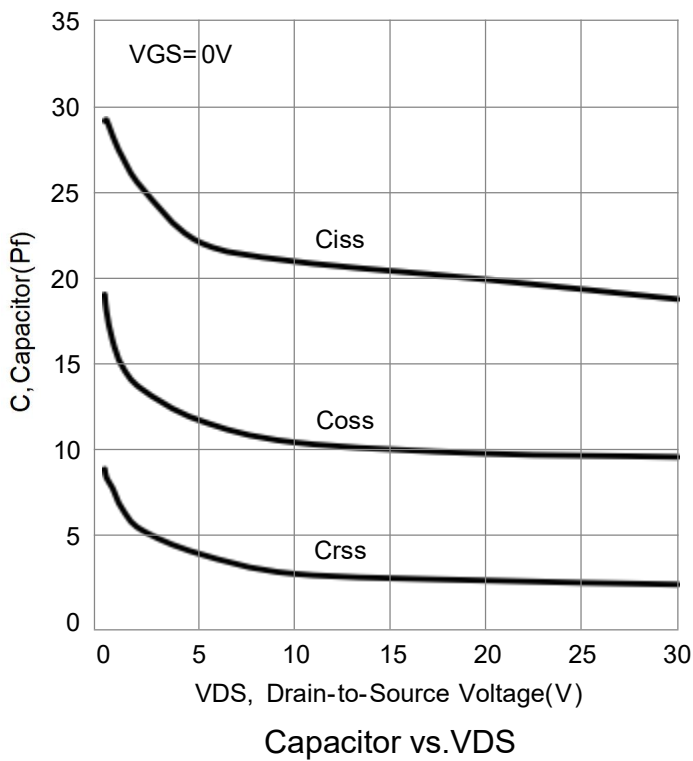
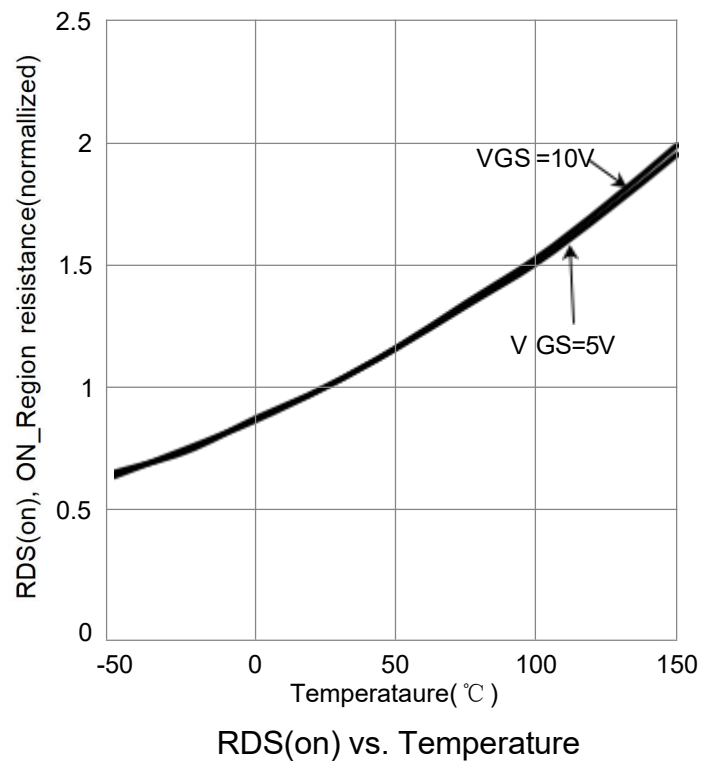
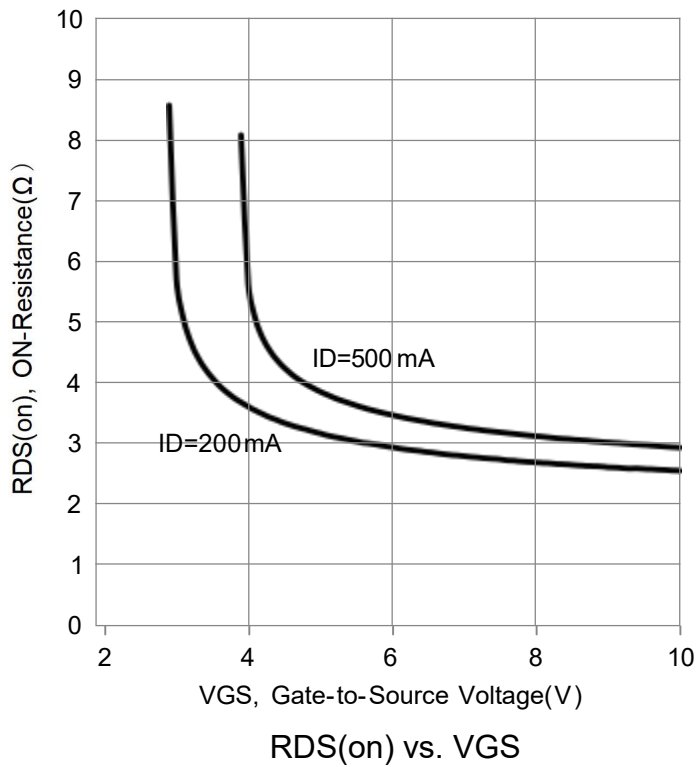
Diode Forward On–Voltage (IS = 115 mA, VGS = 0 V)	VSD	-	-	1.5	V
Source Current Continuous (Body Diode)	IS	-	-	115	mA
Source Current Pulsed	ISM	-	-	800	mA

3.Pulse Test: Pulse Width ≤300 μs, Duty Cycle ≤2.0%.

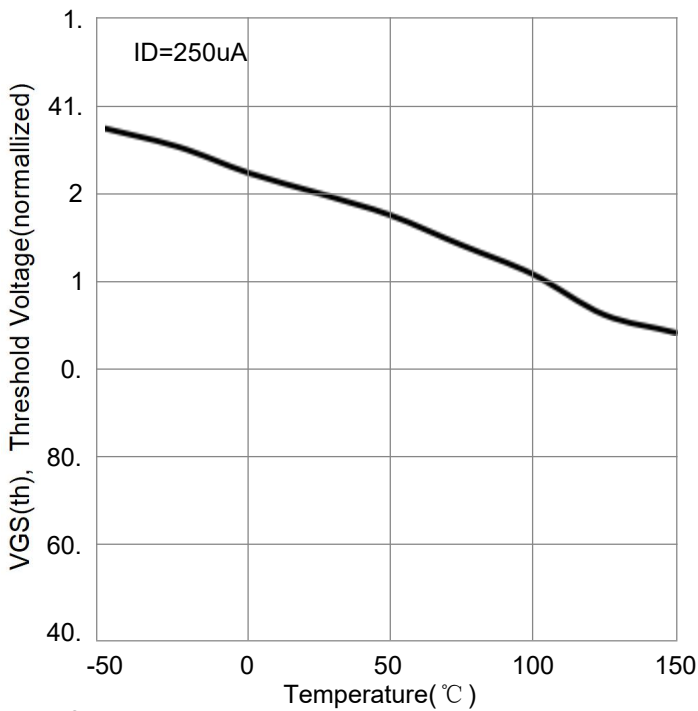
ELECTRICAL CHARACTERISTIC CURVES



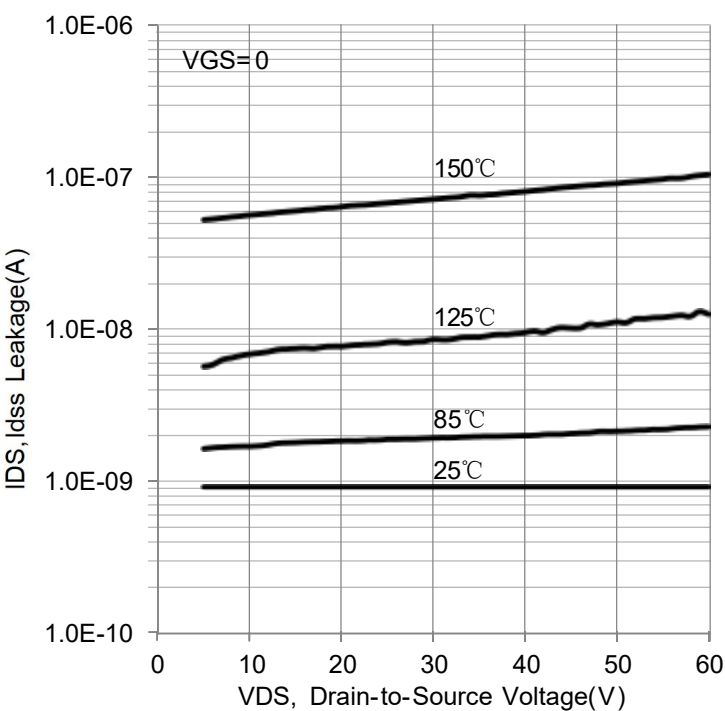
ELECTRICAL CHARACTERISTIC CURVES (Con.)



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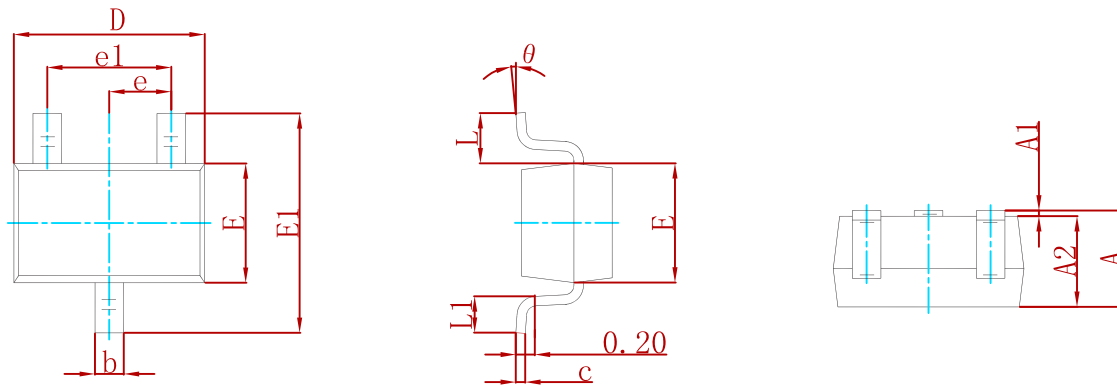


$V_{GS(th)}$ vs. Temperature



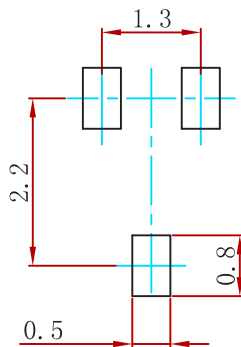
I_{DS} vs. V_{DS}

PACKAGE MECHANICAL DATA



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°

Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

REEL SPECIFICATION

P/N	PKG	QTY
WNM2021-3/MS	SOT-323	3000

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