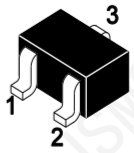
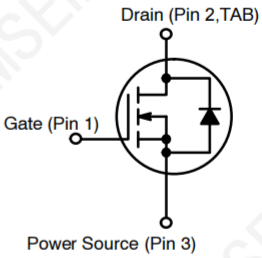
FEATURES

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



SOT-323



MAXIMUM RATINGS(Ta = 25ºC)

Parameter	Symbol	Limits	Unit
Drain–Source Voltage	VDSS	60	Vdc
Drain–Gate Voltage (RGS = 1.0 MΩ)	VDGR	60	Vdc
Drain Current – Continuous TC = 25°C TC = 100°C – Pulsed (Note 1)	ID IDM	 ±115 ±75 ±800	mAdc
Gate–Source Voltage – Continuous – Non–repetitive (tp≤50μs)	VGS VGSM	±20 ±40	Vdc Vdc

THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation, FR−5 Board (Note 2) @ TA = 25ºC Derate above 25ºC	PD	225 1.8	mW mW/ºC
Thermal Resistance, Junction–to–Ambient(Note 2)	RΘJA	556	ºC/W
Junction and Storage temperature	TJ,Tstg	−55~+150	°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 = 10μAdc)	VBRDSS	60	-	-	Vdc
Zero Gate Voltage Drain Current TJ = 25°C	IDSS	-	-	1.0	μAdc
(VGS = 0, VDS = 60 Vdc) TJ = 125°C		-	-	500	
Gate–Body Leakage Current, Forward (VGS = 20 Vdc)	IGSSF	-	-	1.0	μAdc
Gate–Body Leakage Current, Reverse (VGS = - 20 Vdc)	IGSSR	-	-	-1.0	μAdc

ON CHARACTERISTICS (Note 3)

Gate Threshold Voltage (VDS = VGS, ID = 250μAdc)	VGS(th)	1.0	1.6	2.5	Vdc
On–State Drain Current (VDS ⩾ 2.0 VDS(on), VGS = 10 Vdc)	ID(on)	500	-	-	mA
Static Drain–Source On–State Voltage	VDS(on)				Vdc
(VGS = 10 Vdc, ID = 500 mAdc)		-	-	3.75	
(VGS = 5.0 Vdc, ID = 50 mAdc)		-	-	0.375	
Static Drain–Source On–State Resistance	RDS(on)				Ohms
(VGS = 10 Vdc, ID = 500 mAdc) TC = 25°C		-	1.4	7.5	
TC = 125°C		-	-	13.5	
(VGS = 5.0 Vdc, ID = 50 mAdc) TC = 25°C		-	1.8	7.5	
TC = 125°C		-	-	13.5	
Forward Transconductance (VDS⩾ 2.0 VDS(on), ID = 200 mAdc)	gfs	80	-	-	mmhos

DYNAMIC CHARACTERISTICS

Input Capacitance (VDS = 25 Vdc, VGS = 0, f = 1.0 MHz)	Cibo	-	17	50	pF
Output Capacitance (VDS = 25 Vdc, VGS = 0, f = 1.0 MHz)	Cobo	-	10	25	pF
Reverse Transfer Capacitance (VDS = 25 Vdc, VGS = 0, f = 1.0 MHz)	Cibo	-	2.5	5.0	pF

SWITCHING CHARACTERISTICS

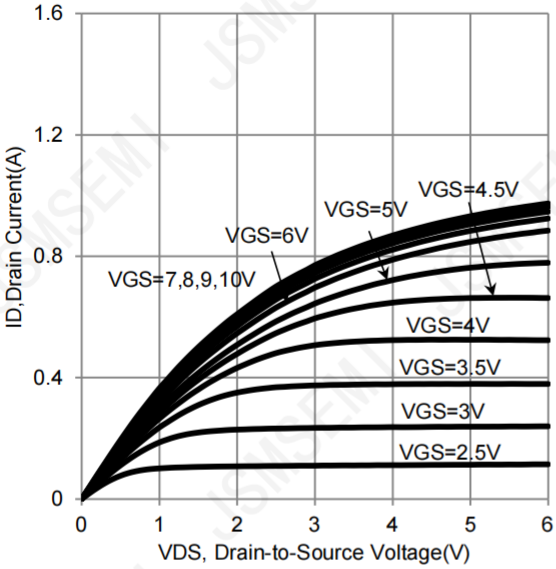
Turn-On Delay Time	(VDD = 25 Vdc , ID =500 mAdc, RG = 25Ω,RL = 50 Ω,Vgen = 10 V)	td(on)	-	7	20	ns
Turn-Off Delay Time		td(off)	-	11	40	

BODY–DRAIN DIODE RATINGS

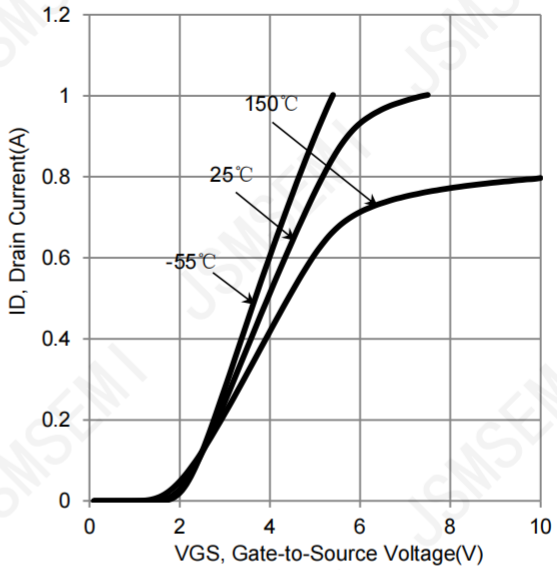
Diode Forward On–Voltage (IS = 115 mAdc, VGS = 0 V)	VSD	-	-	-1.5	Vdc
Source Current Continuous (Body Diode)	IS	-	-	-115	mAdc
Source Current Pulsed	ISM	-	-	-800	mAdc

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

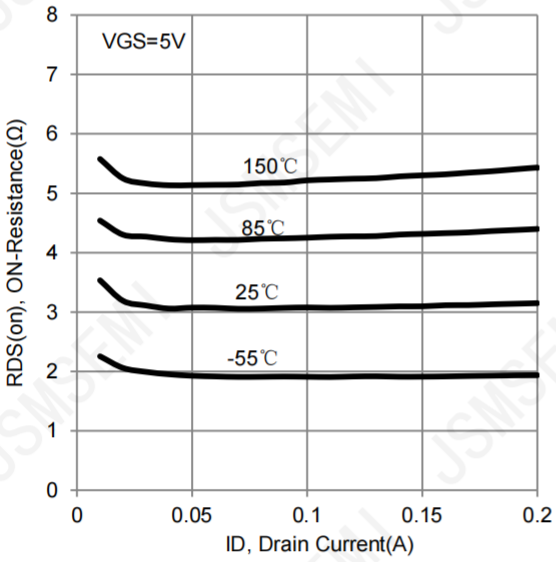
ELRCTRICAL CHARACTERISTICS CURVES



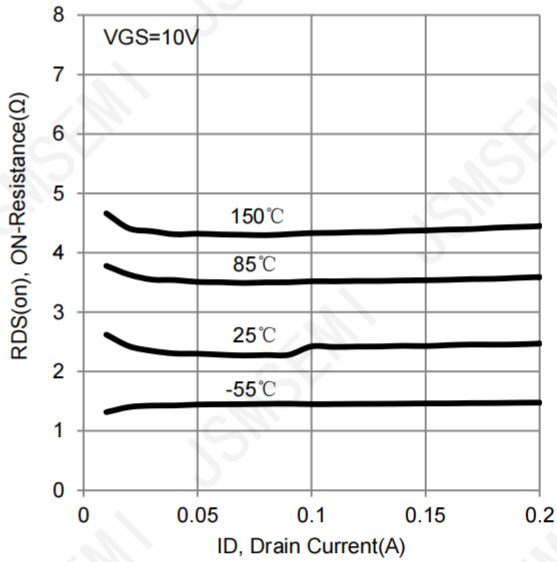
ON-Region Characteristics



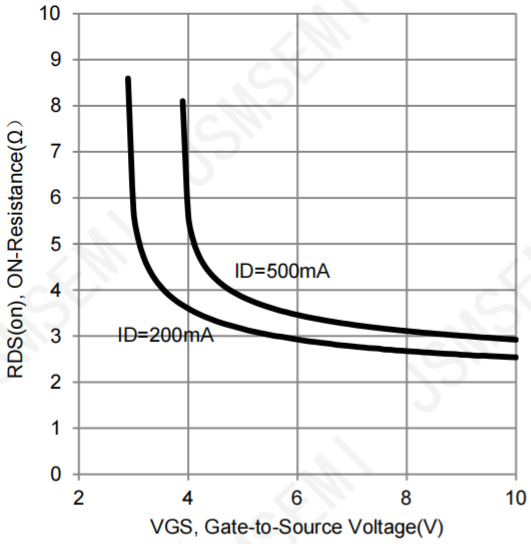
Transfer Characteristcs



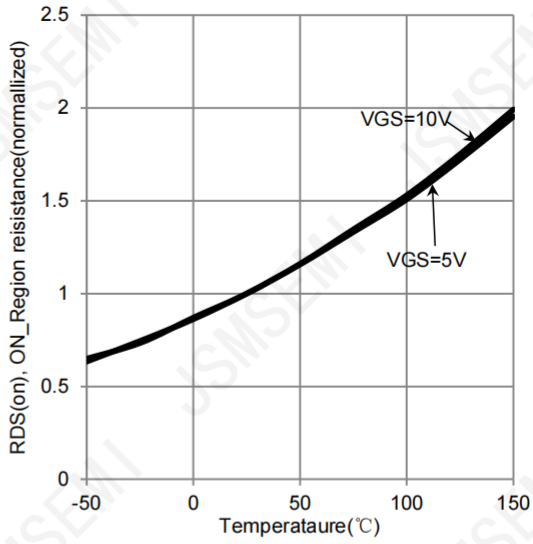
RDS(on) vs. ID



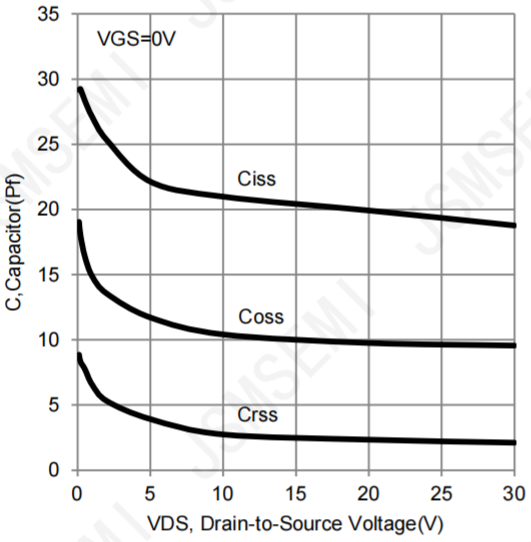
RDS(on) vs. ID



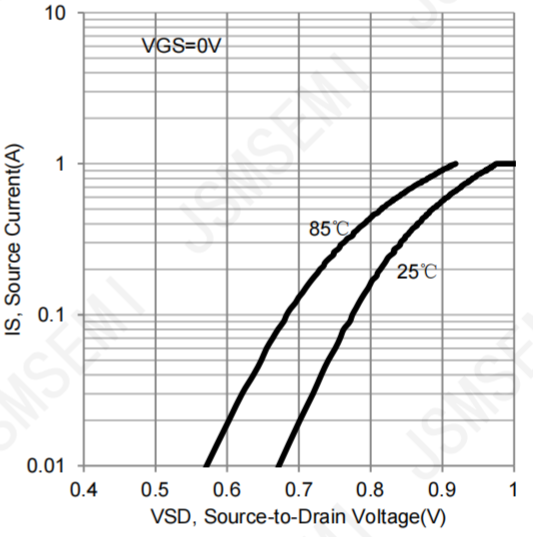
RDS(on) vs. VGS



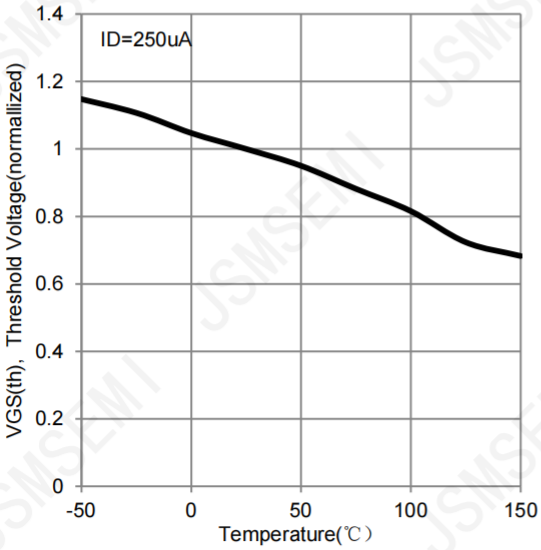
RDS(on) vs. Temperature



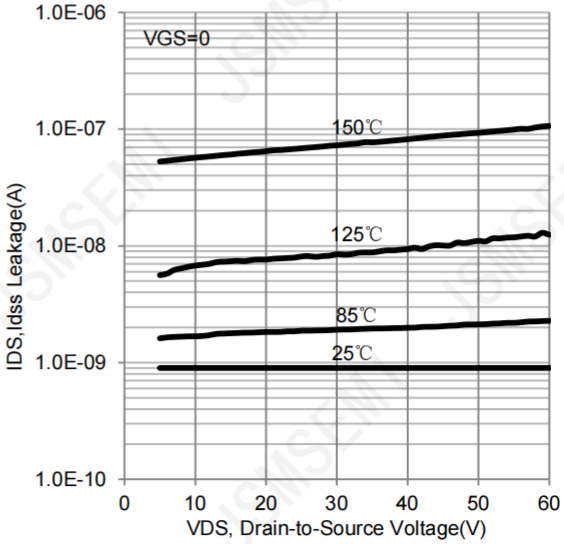
Capacitor vs.VDS



IS vs.VSD

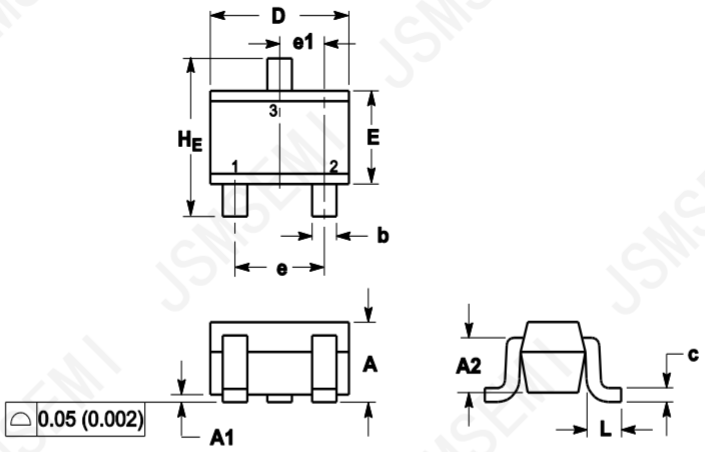


VGS(th) vs. Temperature



IDS vs. VDS

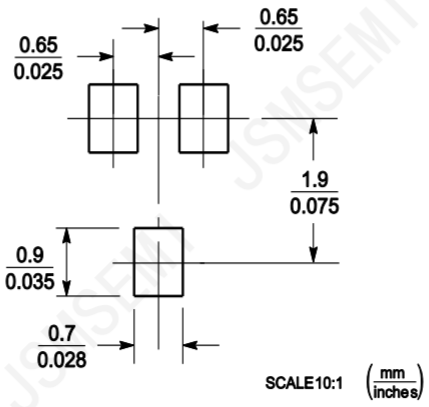
OUTLINE AND DIMENSIONS



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.90	1.00	0.032	0.035	0.039
A1	0.00	0.05	0.10	0.000	0.002	0.004
A2	0.70REF			0.028REF		
b	0.30	0.35	0.40	0.012	0.014	0.016
c	0.10	0.18	0.25	0.004	0.007	0.010
D	1.80	2.10	2.20	0.071	0.083	0.087
E	1.15	1.24	1.35	0.045	0.049	0.053
e	1.20	1.30	1.40	0.047	0.051	0.055
e1	0.65REF			0.026REF		
L	0.20	0.38	0.56	0.008	0.015	0.022
H_E	2.00	2.10	2.40	0.079	0.083	0.095

Notes:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

SOLDERING FOOTPRINT



Revision History

Rev.	Change	Date
V1.0	Initial version	2/23/2024

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