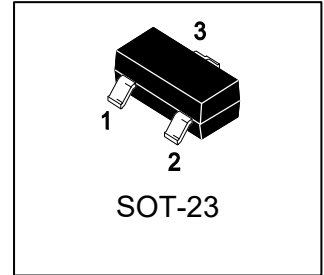


N2502

20V N-Channel Enhancement-Mode MOSFET

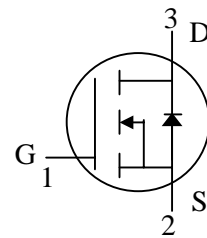


1. FEATURES

- VDS= 20V
- RDS(ON), VGS@2.5V, IDS@5.2A = 50mΩ
- RDS(ON), VGS@4.5V, IDS@6A = 40mΩ
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

2. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
N2502	N25	3000/Tape&Reel



3. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	VDSS	20	V
Gate-to-Source Voltage – Continuous	VGS	±12	V
Drain Current			A
– Continuous TA = 25°C	ID	6	
– Pulsed(Note 1)	IDM	33	
Maximum Power Dissipation	PD	1	W
Operating Junction and Storage Temperature Range	TJ/Tstg	-55~+150	°C

1. Repetitive Rating: Pulse width limited by the maximum junction temperature

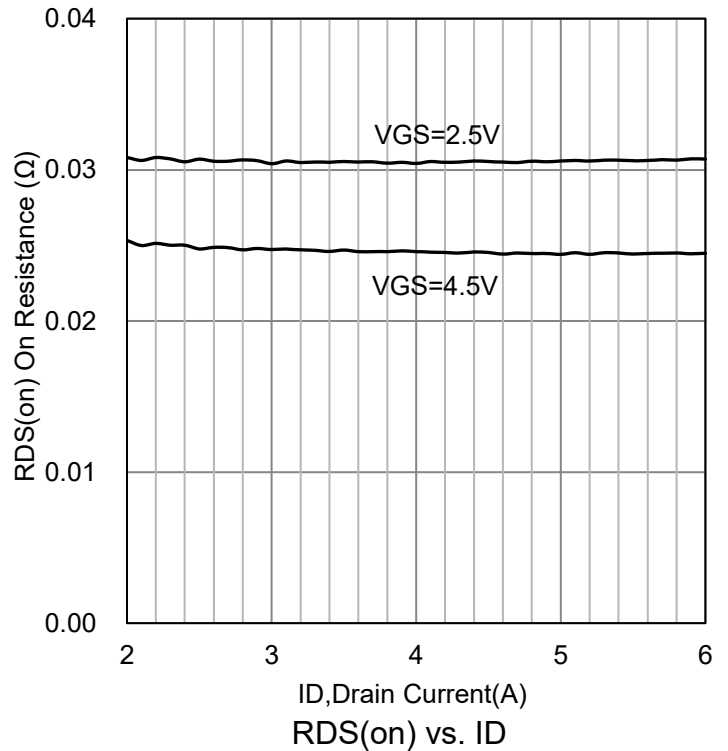
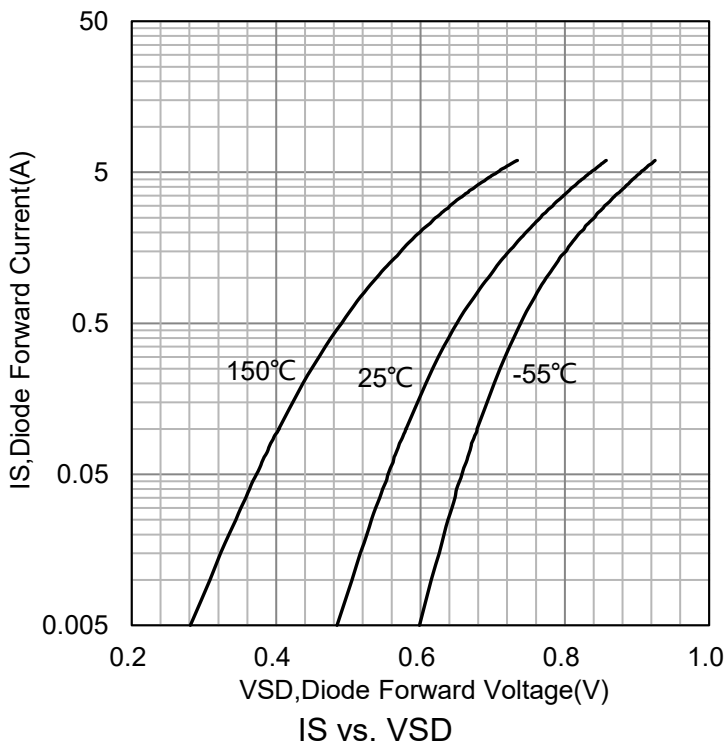
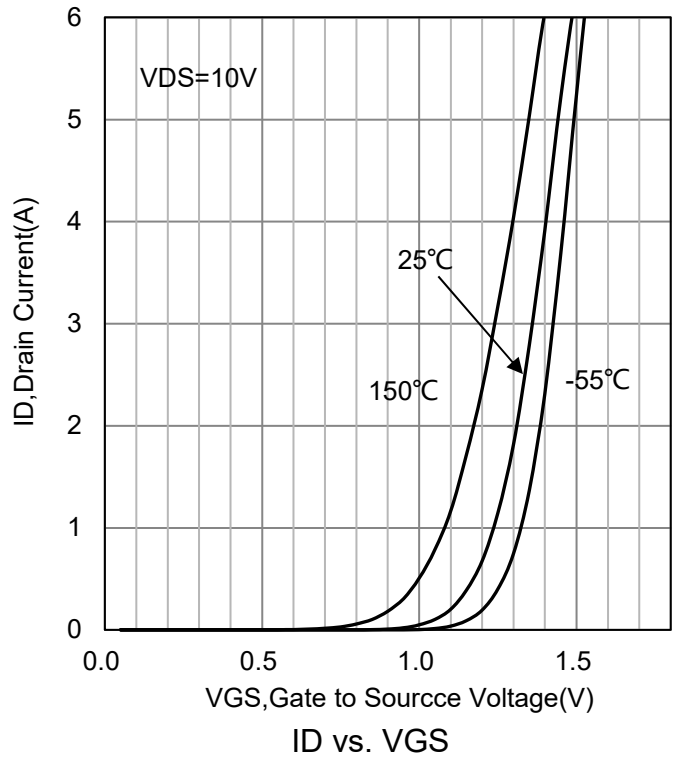
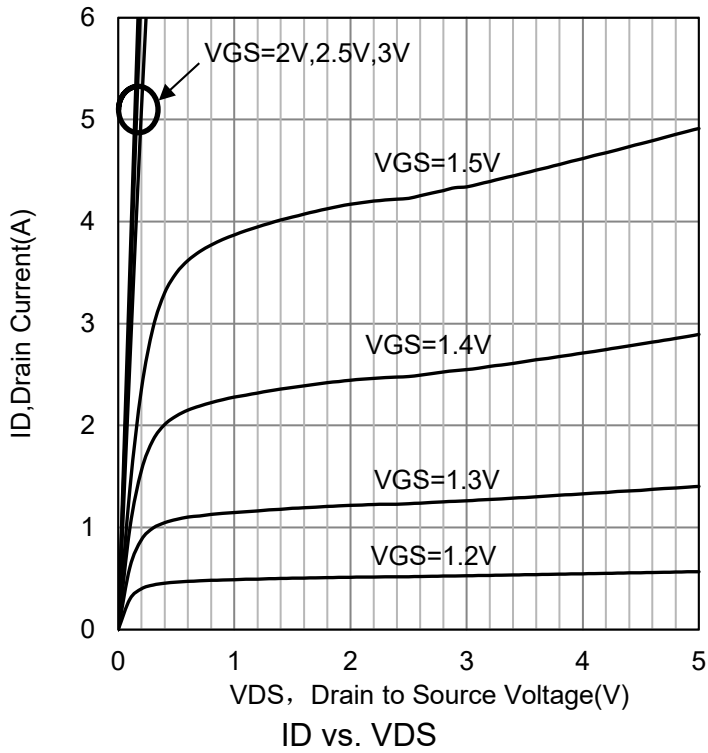


4. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

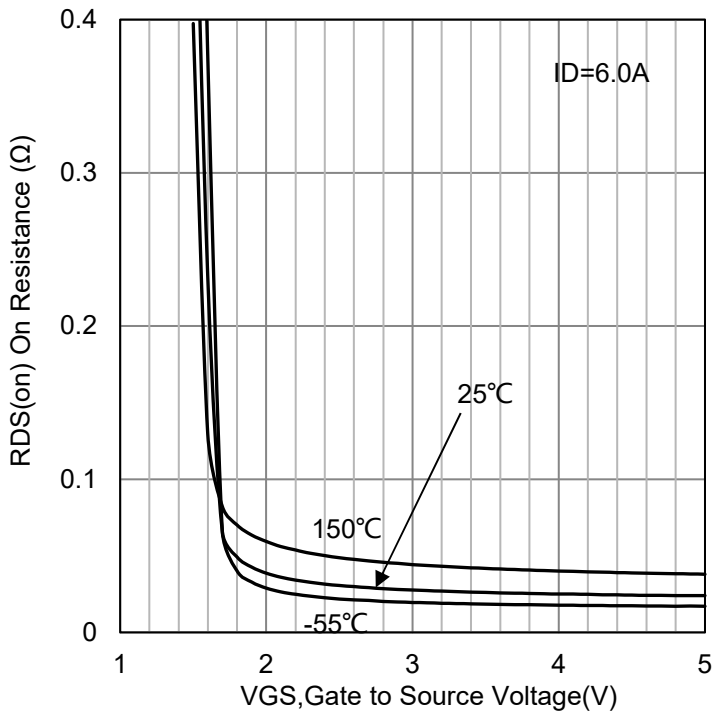
Characteristic	Symbol	Min.	Typ.	Max.	Unit	
Static						
Drain–Source Breakdown Voltage (VGS = 0, ID = 250μA)	V(BR)DSS	20	-	-	V	
Zero Gate Voltage Drain Current (VDS=20V, VGS=0V)	IDSS	-	-	1	μA	
Gate–Body Leakage Current (VDS = 0 V, VGS = ±12 V)	IGSS	-	-	±100	nA	
Forward Transconductance (VDS = 10 V, ID = 6 A)	gfs	-	5	-	S	
Gate Threshold Voltage (VDS = VGS, ID = 250μA)	VGS(th)	0.4	-	0.9	V	
Static Drain–Source On–State Resistance (VGS = 2.5V, ID= 5.2A) (VGS = 4.5 V, ID = 6 A)	RDS(on)	-	42 33	50 40	mΩ	
Dynamic						
Input Capacitance (VGS = 0 V, f = 1.0MHz, VDS= 8 V)	Ciss	-	565	-	pF	
Output Capacitance (VGS = 0 V, f = 1.0MHz, VDS= 8 V)	Coss	-	105	-	pF	
Reverse Transfer Capacitance (VGS = 0 V, f = 1.0MHz, VDS= 8 V)	Crss	-	75	-	pF	
Total Gate Charge	(VDS = 10V, ID = 6A, VGS = 4.5V)	Qg	-	5	7	nC
Gate-Source Charge		Qgs	-	1	-	
Gate-Drain Charge		Qgd	-	1.5	-	
Turn-On Delay Time	(VDD = 10V, ID = 1A, VGS = 4.5V, RG = 6 Ω)	td(on)	-	8	20	ns
Rise Time		tr	-	10	20	
Turn-Off Delay Time		td(off)	-	22	45	
Fall Time		tf	-	6	15	
Max. Diode Forward Current	IS	-	-	1.7	A	
Diode Forward Voltage (VGS = 0 V, IS = 1.7 A)	VSD	-	-	1.2	V	

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

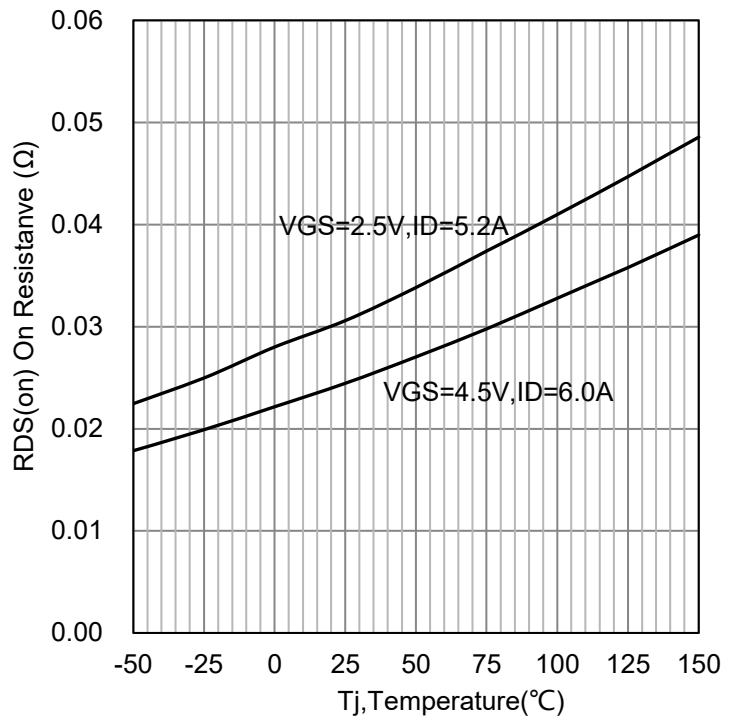


5.ELECTRICAL CHARACTERISTICS CURVES


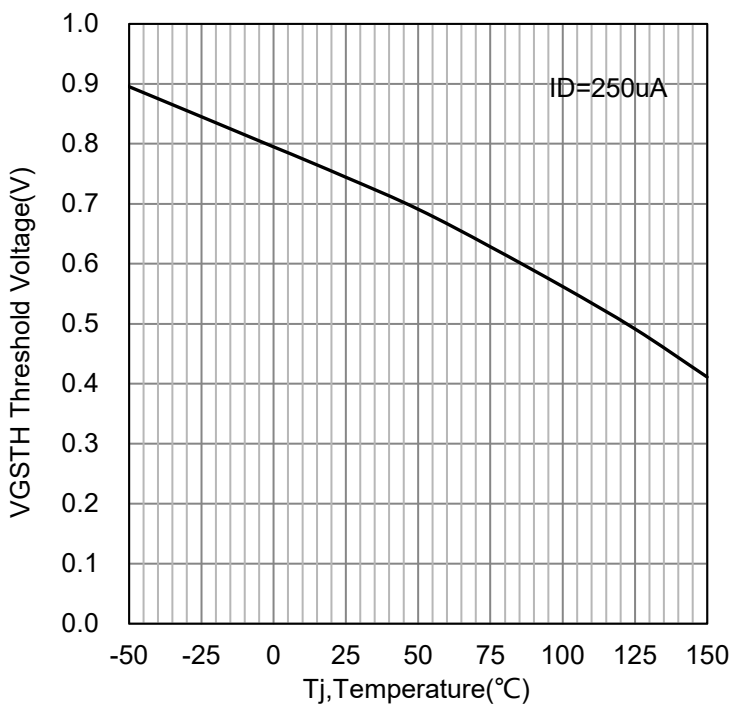
5.ELECTRICAL CHARACTERISTICS CURVES (Con.)



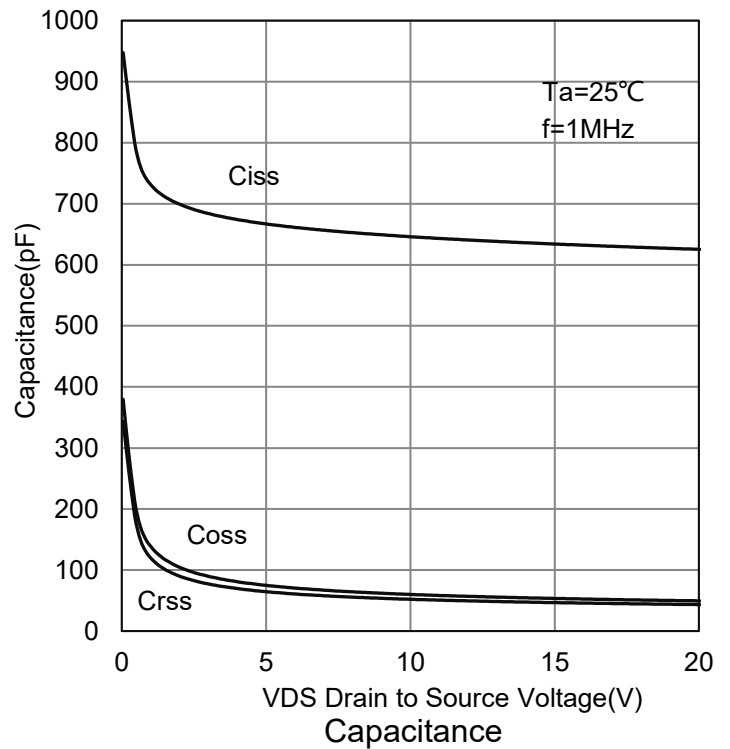
RDS(on) vs. VGS



RDS(on) vs. Tj



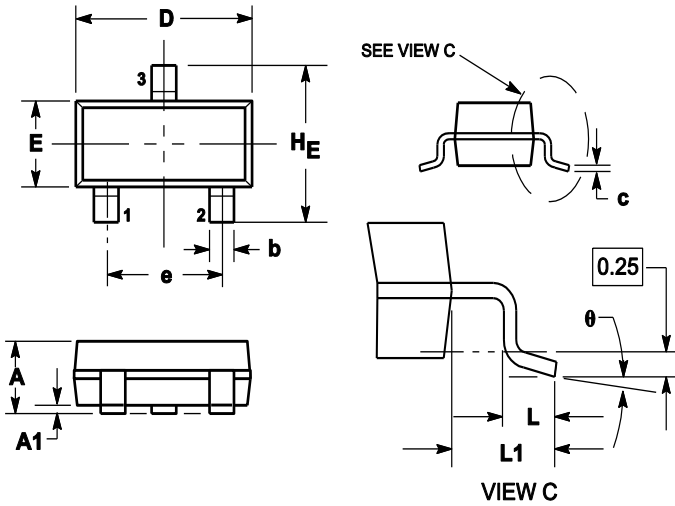
VGSTH vs. Tj



6. OUTLINE AND DIMENSIONS

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.



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1	1.11	0.035	0.04	0.044
A1	0.01	0.06	0.1	0.001	0.002	0.004
b	0.37	0.44	0.5	0.015	0.018	0.02
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.9	3.04	0.11	0.114	0.12
E	1.20	1.3	1.4	0.047	0.051	0.055
e	1.78	1.9	2.04	0.07	0.075	0.081
L	0.10	0.2	0.3	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
HE	2.10	2.4	2.64	0.083	0.094	0.104
θ	0°	---	10°	0°	---	10°

7. SOLDERING FOOTPRINT

