

2N7002, S-2N7002

● ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS					
Drain-Source Breakdown Voltage (V _{GS} = 0, I _D = 10 μAdc)	V _{(BR)DSS}	60	-	-	Vdc
Zero Gate Voltage Drain Current (V _{GS} = 0, V _{DS} = 60 Vdc)	I _{DSS}	-	-	1.0 500	μAdc
T _J = 25° C T _J = 125° C					
Gate-Body Leakage Current, Forward (V _{GS} = 20 Vdc)	I _{GSSF}	-	-	1	μAdc
Gate-Body Leakage Current, Reverse (V _{GS} = -20 Vdc)	I _{GSSR}	-	-	-1	μAdc

ON CHARACTERISTICS (Note 2.)

Gate Threshold Voltage (V _{DS} = V _{GS} , I _D = 250 μAdc)	V _{GS(th)}	1	1.6	2	Vdc
On-State Drain Current (V _{DS} ≥ 2.0 V _{DS(on)} , V _{GS} = 10 Vdc)	I _{D(on)}	500	-	-	mA
Static Drain-Source On-State Voltage (V _{GS} = 10 Vdc, I _D = 500 mAdc) (V _{GS} = 5.0 Vdc, I _D = 50 mAdc)	V _{DS(on)}	-	-	3.75 0.375	Vdc
Static Drain-Source On-State Resistance (V _{GS} = 10 V, I _D = 500 mAdc) T _C = 25° C T _C = 125° C (V _{GS} = 5.0 Vdc, I _D = 50 mAdc) T _C = 25° C T _C = 125° C	r _{DS(on)}	-	1.4 - 1.8 -	7.5 13.5 7.5 13.5	Ohms
(V _{DS} ≥ 2.0 V _{DS(on)} , I _D = 200 mAdc)	g _{FS}	80	-	-	mmhos

DYNAMIC CHARACTERISTICS

Input Capacitance (V _{DS} = 25 Vdc, V _{GS} = 0, f = 1.0 MHz)	C _{iss}	-	17	50	pF
Output Capacitance (V _{DS} = 25 Vdc, V _{GS} = 0, f = 1.0 MHz)	C _{oss}	-	10	25	pF
Reverse Transfer Capacitance (V _{DS} = 25 Vdc, V _{GS} = 0, f = 1.0 MHz)	C _{rss}	-	2.5	5.0	pF

SWITCHING CHARACTERISTICS (Note 2.)

Turn-On Delay Time	(V _{DD} = 25 Vdc, I _D = 500 mAdc, R _G = 25 Ω, R _L = 50 Ω, V _{gen} = 10V)	td(on)	-	7	20	ns
Turn-Off Delay Time		td(off)	-	11	40	ns

BODY-DRAIN DIODE RATINGS

Diode Forward On-Voltage (I _S = 115 mAdc, V _{GS} = 0V)	V _{SD}	-	-	-1.5	Vdc
Source Current Continuous (Body Diode)	I _S	-	-	-115	mAdc
Source Current Pulsed	I _{SM}	-	-	-800	mAdc

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

ELECTRICAL CHARACTERISTIC CURVES

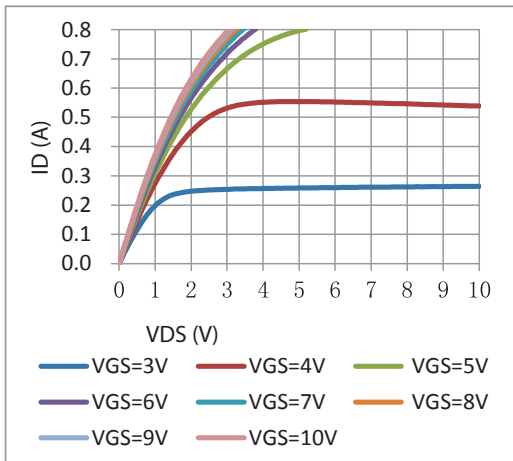


FIG1. On-Region Characteristic

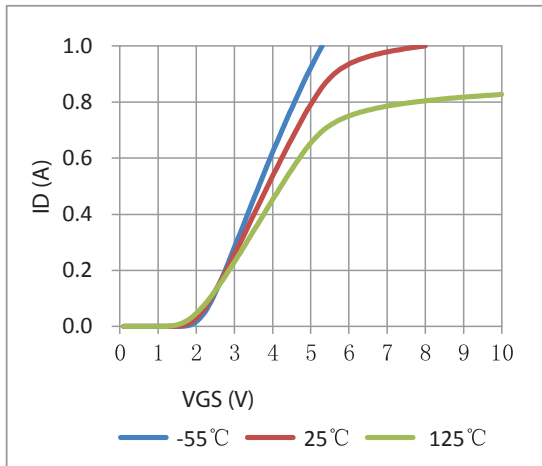


FIG2. Transfer Characteristics

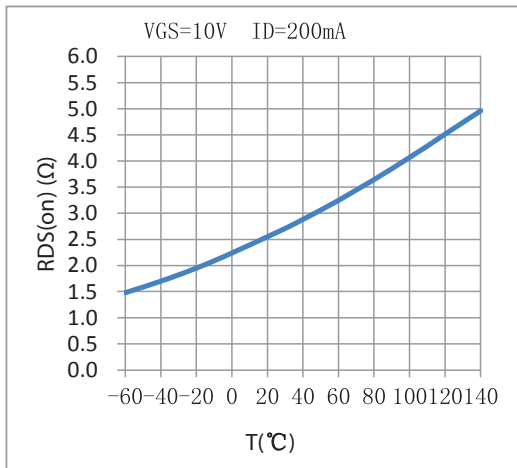


FIG. 3 Temperature vs Static Drain-Source On-Resistance

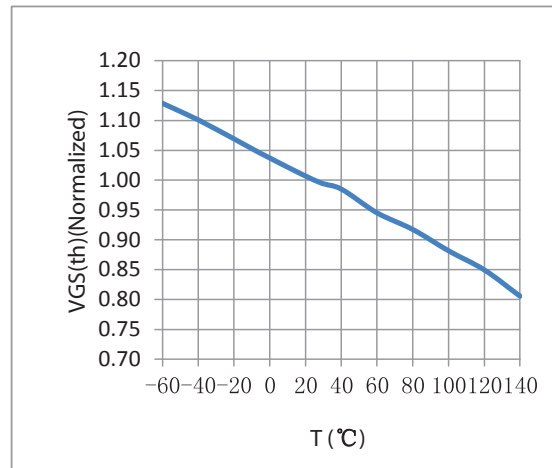
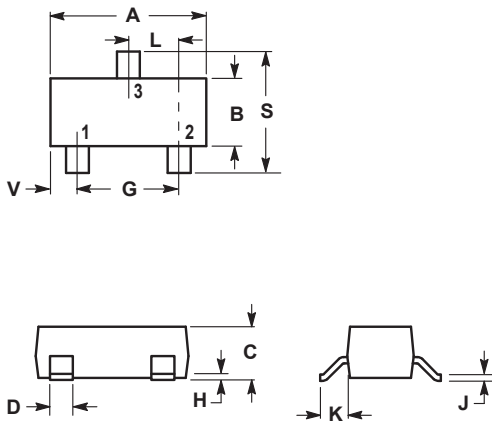


FIG. 4 Temperature vs Gate Threshold

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Dimension Outline:



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M,1982
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

Soldering Footprint:

