

2N7000G

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Drain–Source Breakdown Voltage ($V_{GS} = 0$, $I_D = 10\ \mu\text{Adc}$)	$V_{(BR)DSS}$	60	–	Vdc
Zero Gate Voltage Drain Current ($V_{DS} = 48\ \text{Vdc}$, $V_{GS} = 0$) ($V_{DS} = 48\ \text{Vdc}$, $V_{GS} = 0$, $T_J = 125^\circ\text{C}$)	I_{DSS}	– –	1.0 1.0	μAdc mAdc
Gate–Body Leakage Current, Forward ($V_{GSF} = 15\ \text{Vdc}$, $V_{DS} = 0$)	I_{GSSF}	–	–10	nAdc

ON CHARACTERISTICS (Note 1)

Gate Threshold Voltage ($V_{DS} = V_{GS}$, $I_D = 1.0\ \text{mAdc}$)	$V_{GS(th)}$	0.8	3.0	Vdc
Static Drain–Source On–Resistance ($V_{GS} = 10\ \text{Vdc}$, $I_D = 0.5\ \text{Adc}$) ($V_{GS} = 4.5\ \text{Vdc}$, $I_D = 75\ \text{mAdc}$)	$r_{DS(on)}$	– –	5.0 6.0	Ω
Drain–Source On–Voltage ($V_{GS} = 10\ \text{Vdc}$, $I_D = 0.5\ \text{Adc}$) ($V_{GS} = 4.5\ \text{Vdc}$, $I_D = 75\ \text{mAdc}$)	$V_{DS(on)}$	– –	2.5 0.45	Vdc
On–State Drain Current ($V_{GS} = 4.5\ \text{Vdc}$, $V_{DS} = 10\ \text{Vdc}$)	$I_{d(on)}$	75	–	mAdc
Forward Transconductance ($V_{DS} = 10\ \text{Vdc}$, $I_D = 200\ \text{mAdc}$)	g_{fs}	100	–	μmhos

DYNAMIC CHARACTERISTICS

Input Capacitance	$(V_{DS} = 25\ \text{V}$, $V_{GS} = 0$, $f = 1.0\ \text{MHz})$	C_{iss}	–	60	pF
Output Capacitance		C_{oss}	–	25	
Reverse Transfer Capacitance		C_{rss}	–	5.0	

SWITCHING CHARACTERISTICS (Note 1)

Turn–On Delay Time	$(V_{DD} = 15\ \text{V}$, $I_D = 500\ \text{mA}$, $R_G = 25\ \Omega$, $R_L = 30\ \Omega$, $V_{gen} = 10\ \text{V})$	t_{on}	–	10	ns
Turn–Off Delay Time		t_{off}	–	10	

1. Pulse Test: Pulse Width $\leq 300\ \mu\text{s}$, Duty Cycle $\leq 2.0\%$.

ORDERING INFORMATION

Device	Package	Shipping†
2N7000G	TO–92 (Pb–Free)	1000 Units / Bulk
2N7000RLRAG	TO–92 (Pb–Free)	2000 Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

2N7000G

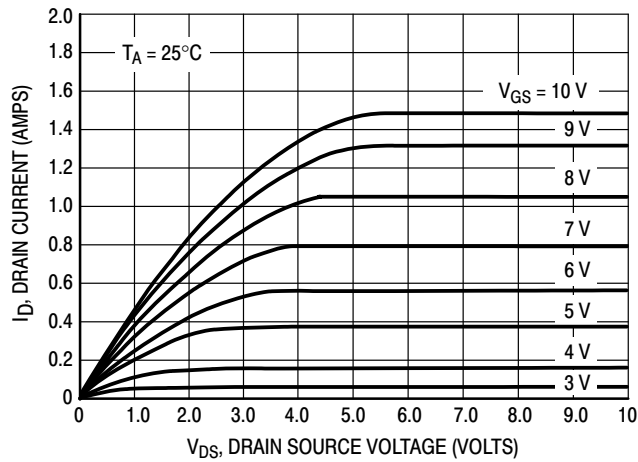


Figure 1. Ohmic Region

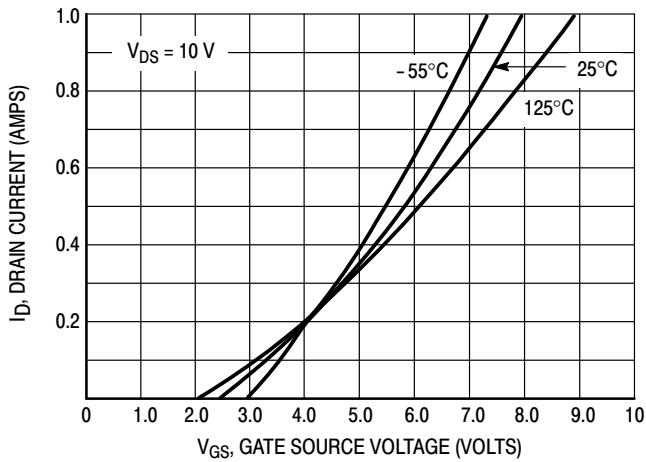


Figure 2. Transfer Characteristics

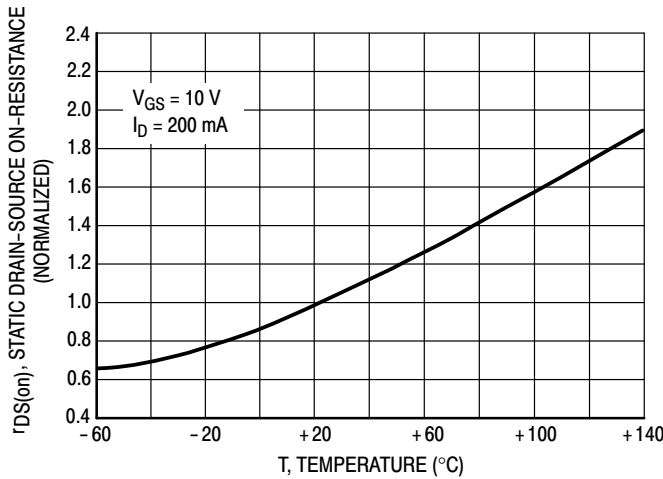


Figure 3. Temperature versus Static Drain-Source On-Resistance

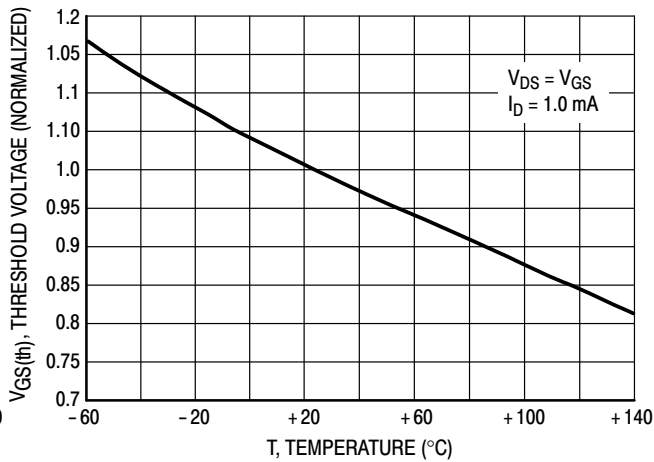
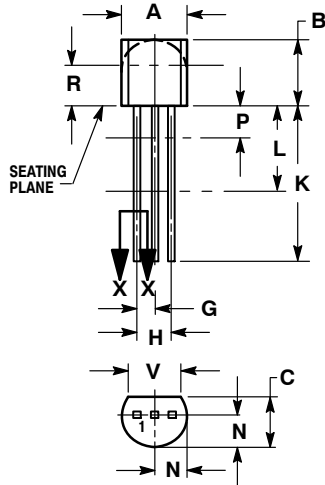


Figure 4. Temperature versus Gate Threshold Voltage

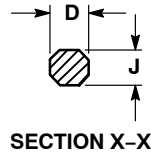
2N7000G

PACKAGE DIMENSIONS

TO-92 (TO-226)
CASE 29-11
ISSUE AM



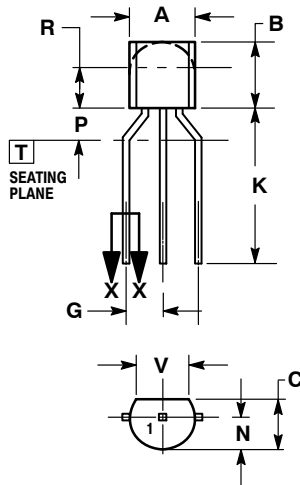
STRAIGHT LEAD
BULK PACK



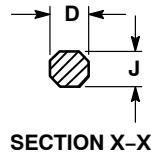
NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.175	0.205	4.45	5.20
B	0.170	0.210	4.32	5.33
C	0.125	0.165	3.18	4.19
D	0.016	0.021	0.407	0.533
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.015	0.020	0.39	0.50
K	0.500	---	12.70	---
L	0.250	---	6.35	---
N	0.080	0.105	2.04	2.66
P	---	0.100	---	2.54
R	0.115	---	2.93	---
V	0.135	---	3.43	---



BENT LEAD
TAPE & REEL
AMMO PACK




NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

DIM	MILLIMETERS	
	MIN	MAX
A	4.45	5.20
B	4.32	5.33
C	3.18	4.19
D	0.40	0.54
G	2.40	2.80
J	0.39	0.50
K	12.70	---
N	2.04	2.66
P	1.50	4.00
R	2.93	---
V	3.43	---

STYLE 22:

1. SOURCE
2. GATE
3. DRAIN

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