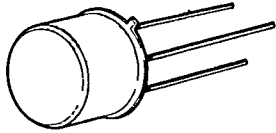
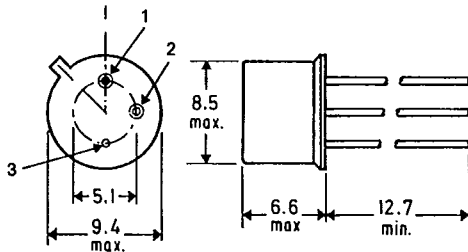


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**2N 6791**  
**2N 6792**
**MECHANICAL DATA**

Dimensions in mm

**MOS POWER**  
**N-Channel Enhancement Mode**
**APPLICATIONS**

- INVERTERS
- MOTOR CONTROLS
- CHOPPERS

PIN 1—Source PIN 2—Gate PIN 3 Drain and Case

T039

**ABSOLUTE MAXIMUM RATINGS** ( $T_{CASE} = 25^{\circ}C$  unless otherwise specified)

Parameter	2N 6791	2N 6792
$V_{DS}$	350V	400V
$V_{DGR}$	350V	400V
$I_D @ T_c = 25^{\circ}C$	±2A	
$I_D @ T_c = 100^{\circ}C$	±1.25A	
$I_{DM}$	±4A	
$V_{GS}$	±40V	
$P_D @ T_c = 25^{\circ}C$	20W	
$P_D @ T_c = 100^{\circ}C$	8W	
Junction to case	0.12 W/°C	
Junction to ambient	0.006 W/°C	
$T_J$	Operating and	
$T_{stg}$	storage temperature range	
Lead temperature	(1/16" from case for 10 secs.)	

(i) Pulse test: Pulse width  $\leq 300 \mu\text{sec}$ , duty cycle  $\leq 2\%$ 

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ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25°C unless otherwise specified)

## STATIC

Parameter	Type	Min.	Typ.	Max.	Units	Test Conditions
BV <sub>DSS</sub> Drain-Source Breakdown Voltage	2N6791	350*			V	V <sub>GS</sub> = 0 I <sub>D</sub> = 1.0 mA
	2N6792	400*			V	
V <sub>GS(th)</sub> Gate-Threshold Voltage	All	2.0*		4.0*	V	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 1.0 mA
I <sub>GSSF</sub> Gate-Body Leakage Forward	All			100*	nA	V <sub>GS</sub> = 20V
I <sub>GSSR</sub> Gate-Body Leakage Reverse	All			-100*	nA	V <sub>GS</sub> = -20V
I <sub>DSS</sub> Zero Gate Voltage Drain Current	All			1.0*	mA	V <sub>DS</sub> = Max. Rating, V <sub>GS</sub> = 0
	All			4.0*	mA	V <sub>DS</sub> = Max. Rating, V <sub>GS</sub> = 0 T <sub>C</sub> = 125°C
I <sub>D(on)</sub> On-State Drain Current <sup>1</sup>	2N6791	1.25			A	V <sub>DS</sub> > 2V <sub>DS(ON)</sub> , V <sub>GS</sub> = 10V
	2N6792	1.25			A	V <sub>DS</sub> > 2V <sub>DS(ON)</sub> , V <sub>GS</sub> = 10V
V <sub>DS(on)</sub> Static Drain-Source On-State Voltage <sup>1</sup>	2A6791			3.6*	V	V <sub>GS</sub> = 10V, I <sub>D</sub> = 2.0A
	2N6792			3.6*	V	V <sub>GS</sub> = 10V, I <sub>D</sub> = 2.0A
R <sub>DS(on)</sub> Static Drain-Source On-State Resistance <sup>1</sup>	2N6791			1.8*	Ω	V <sub>GS</sub> = 10V, I <sub>D</sub> = 1.25A
	2N6792			1.8*	Ω	V <sub>GS</sub> = 10V, I <sub>D</sub> = 1.25A
R <sub>DS(on)</sub> Static Drain-Source On-State Resistance <sup>1</sup>	2N6791			4.0*	Ω	V <sub>GS</sub> = 0, I <sub>D</sub> = 1.25A, T <sub>C</sub> = 125°C
	2N6792			4.0*	Ω	V <sub>GS</sub> = 0, I <sub>D</sub> = 1.25A, T <sub>C</sub> = 125°C


## DYNAMIC

S <sub>fs</sub> Forward Transconductance <sup>1</sup>	All	1.0*		3.0*	S (Ω)	V <sub>DS</sub> > 2V <sub>DS(ON)</sub> , I <sub>D</sub> = 1.25A
C <sub>iss</sub> Input Capacitance	All	200*		600*	pF	V <sub>GS</sub> = 0, V <sub>DS</sub> = 25V f = 1 MHz
C <sub>oss</sub> Output Capacitance	All	40*		200*	pF	
C <sub>rss</sub> Reverse Transfer Capacitance	All	5*		40*	pF	
t <sub>d(on)</sub> Turn-On Delay Time	All			40*	ns	V <sub>DD</sub> = 175V, I <sub>D</sub> = 1.25A R <sub>g</sub> = 25Ω, R <sub>L</sub> = 140Ω (MOS FET switching times are essentially independent of operating temperature.)
t <sub>r</sub> Rise Time	All			35*	ns	
t <sub>d(off)</sub> Turn-Off Delay Time	All			60*	ns	
t <sub>f</sub> Fall Time	All			35*	ns	

## THERMAL RESISTANCE

R <sub>thJC</sub> Junction-to-Case	All			6.25*	°C/W	
R <sub>thJA</sub> Junction-to-Ambient	All			170	°C/W	Free Air Operation

## BODY-DRAIN DIODE RATINGS AND CHARACTERISTICS

I <sub>S</sub> Continuous Source Current (Body Diode)	2N6791			-2*	A	Modified MOSPOWER symbol showing the intergal P-N junction rectifier. 
	2N6792			-2*	A	
I <sub>SM</sub> Source Current <sup>1</sup> (Body Diode)	2N6791			-4	A	
	2N6792			-4	A	
V <sub>SD</sub> Diode Forward Voltage <sup>1</sup>	2N6791	-0.6*		-1.4*	V	T <sub>C</sub> = 25°C, I <sub>S</sub> = -2A, V <sub>GS</sub> = 0
	2N6792	-0.6*		-1.4*	V	T <sub>C</sub> = 25°C, I <sub>S</sub> = -2A, V <sub>GS</sub> = 0
t <sub>rr</sub> Reverse Recovery Time	All		400		ns	T <sub>J</sub> = 150°C, I <sub>F</sub> = I <sub>S</sub> , dI <sub>F</sub> /dS = 100 A/μs

<sup>1</sup> Pulse Test: Pulse Width < 300 μsec, Duty Cycle < 2%  
\* JEDEC Registered Values

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