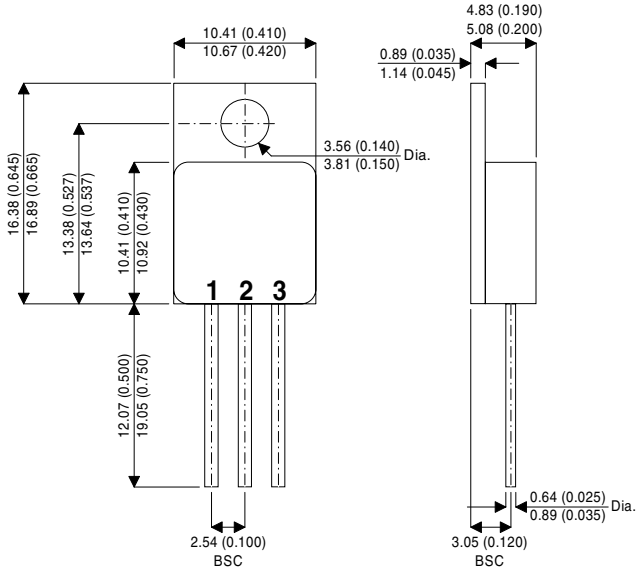
2N7091

MECHANICAL DATA
Dimensions in mm(inches)



TO–257AB Metal Package

Pin 1 – Gate Pin 2 – Drain Pin 3 – Source

P–CHANNEL ENHANCEMENT MODE TRANSISTOR

$V_{(BR)DSS}$ **-100V**
$I_{D(A)}$ **-14A**
$R_{DS(on)}$ **0.20Ω**

FEATURES

- **TO257AB HERMETIC PACKAGE FOR HIGH RELIABILITY APPLICATIONS**
- **SCREENING OPTIONS AVAILBLE**
- **SIMPLE DRIVE REQUIREMENTS**

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

V_{DS}	Drain – Source Voltage		- 100V
V_{GS}	Gate – Source Voltage		±20V
I_D	Continuous Drain Current (T_J = 150°C)	T_C = 25°C	-14A
		T_C = 100°C	-8.7A
I_{DM}	Pulsed Drain Current		56A
P_D	Power Dissipation	T_C = 25°C	70W
		T_C = 100°C	27W
T_J , T_{stg}	Operating Junction and Storage Temperature Range		–55 to 150°C
T_L	Lead Temperature ($^1/_{16}$" from case for 10 sec.)		300°C

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SEME LAB

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ELECTRICAL CHARACTERISTICS (T_J = 25°C unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
STATIC ELECTRICAL RATINGS							
$V_{(BR)DSS}$	Drain–Source Breakdown Voltage	V_{GS} = 0	I_D = -250µA	-100			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}	I_D = -250µA	-2		-4	V
I_{GSS}	Gate – Body Leakage	V_{DS} = 0	V_{GS} = ±20V			±100	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = -80V				-25	µA
		V_{GS} = 0	T_J = 125°C			-250	
$I_{D(on)}$	On–State Drain Current[1]	V_{DS} = -10V	V_{GS} = -10V	-14			A
$r_{DS(on)}$	Drain – Source On–State Resistance [1]	V_{GS} = -10V			0.15	0.20	Ω
		I_D = 8.7A	T_J = 125°C		2.3	0.32	
g_{fs}	Forward Transconductance[1]	V_{DS} = -15V	I_{DS} = -8.7A	5.0			S
DYNAMIC CHARACTERISTICS							
C_{iss}	Input Capacitance	V_{GS} = 0			1300		pF
C_{oss}	Output Capacitance	V_{DS} = 25V			750		
C_{rss}	Reverse Transfer Capacitance	f = 1MHz			310		
Q_g	Total Gate Charge[2]	V_{DS} = -50			50	62	nC
Q_{gs}	Gate Source Charge[2]	V_{GS} = -10V	I_D = -14A		10	15	
Q_{gd}	Gate Drain Charge[2]				27	35	
$t_{d(on)}$	Turn–On Delay Time[2]	V_{DD} = -50V	I_D = -14A		10	30	ns
t_r	Rise Time[2]	V_{GEN} =-10V			50	80	
$t_{d(off)}$	Turn–Off Delay Time[2]	R_L = 3.5Ω			40	80	
t_f	Fall Time[2]	R_G = 4.7Ω			40	60	
SOURCE – DRAIN DIODE CHARACTERISTICS							
I_S	Continuous Current					-14	A
I_{SM}	Pulsed Current					-56	
V_{SD}	Diode Forward Voltage[1]	I_F = -14A	V_{GS} = 0			-2	V
t_{rr}	Reverse Recovery Time	I_F = -14A			150	300	ns
Q_{rr}	Reverse Recovery Charge	di/dt = 100A/µs			0.3		µC

[1] Pulse test : Pulse Width < 300µs ,Duty Cycle < 2%

[2] Independent of Operating Temperature

THERMAL RESISTANCECHARACTERISTICS

	Parameter	Min.	Typ.	Max.	Unit
R_{thJC}	Thermal resistance Junction-Case			1.8	
R_{thJA}	Thermal resistance Junction-ambient			80	°C/W
R_{thCS}	Thermal resistance Case to Sink		1.0		

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