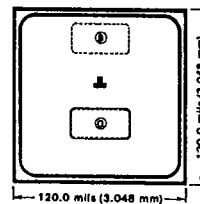


# N-Channel Enhancement-Mode Power Field-Effect Transistor Chip

50 V, 15 A, 0.14 Ω

## Features:

- **Contact metallization:**  
Gate and source-aluminum  
Drain-tri-metal (Al-Ti-Ni)
- **Assembly recommendations:**  
Gate and source-10-mil aluminum wire  
Drain-mounted with 95/5 lead-tin solder
- Die Number-09522
- Device types that are derived from PCF15N05L-  
RFM15N05L RFP15N05L  
RFM15N06L RFP15N06L



ATTACH AREAS: 92CB-36990  
 Ⓢ Source } 0.020" x 0.040" (0.508 mm x 1.016 mm)  
 Ⓜ Gate }  
 Ⓜ Back Side - Drain  
 DIE THICKNESS - 14 ± 1 mils (0.356 ± 0.025 mm)

## CHIP LAYOUT

## Electrical Characteristics at 25°C

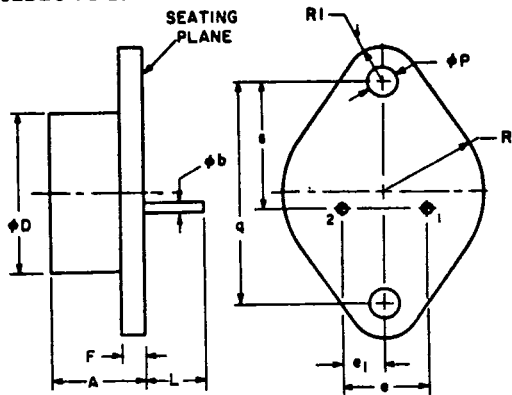
The chip is 100% probed to the actual conditions and limits specified.

Characteristic	Test Conditions	Limits		Units
		PCF15N05L		
		Min.	Max.	
$BV_{DSS}$	$I_D=1\text{ mA}$ $V_{GS}=0$	50	—	V
$V_{GS(TH)}$	$V_{GS}=V_{DS}$ $I_D=1\text{ mA}$	1	2	V
$I_{DSS}$	$V_{DS}=40\text{ V}$	—	1	μA
$I_{GSS}$	$V_{GS}=\pm 10\text{ V}$ $V_{DS}=0$	—	100	nA
$V_{DS(ON)}^a$	$I_D=7.5\text{ A}$ $V_{GS}=5\text{ V}$	—	1.05	V
$g_{fs}^a$	$V_{DS}=10\text{ V}$ $I_D=7.5\text{ A}$	2	—	www.DataSheet4U.com

<sup>a</sup>Pulsed; pulse duration=300 μs max., duty factor=2%.

# Dimensional Outlines

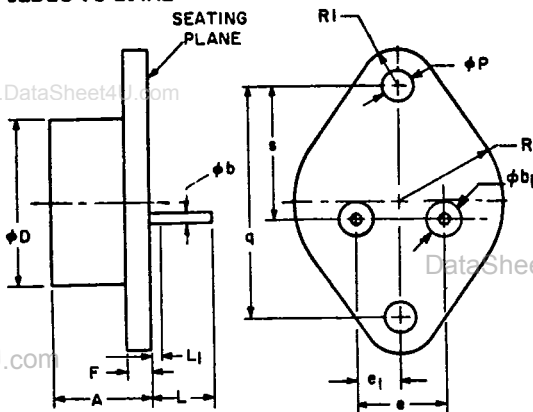
## JEDEC TO-204AA



SYMBOL	INCHES		MILLIMETERS		NOTE
	MIN.	MAX.	MIN.	MAX.	
A	0.250	0.450	6.4	11.4	
$\phi b$	0.038	0.043	0.968	1.092	
$\phi D$	—	0.875	—	22.22	
e	0.420	0.440	10.67	11.17	
$e_1$	0.205	0.225	5.21	5.71	
F	—	0.135	—	3.42	
L	0.312	—	7.93	—	
$\phi P$	0.151	0.161	3.84	4.08	
q	1.187 BSC		30.15 BSC		
R	—	0.525	—	13.33	
$R_1$	—	0.188	—	4.77	
s	0.655	0.675	16.64	17.14	

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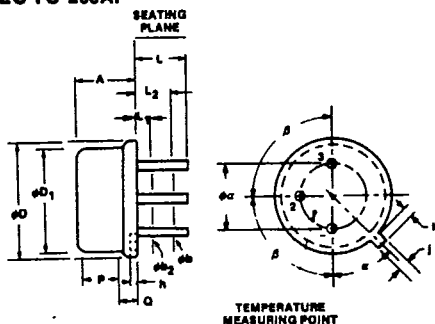
## JEDEC TO-204AE



SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	0.250	0.450	6.4	11.4	
$\phi b$	0.057	0.063	1.45	1.60	
$\phi b_1$	0.141 NOM		3.58 NOM		
$\phi D_2$	—	0.875	—	22.22	
e	0.420	0.440	10.67	11.17	
$e_1$	0.205	0.225	5.21	5.71	
F	0.060	0.135	1.53	3.42	
L	0.440	0.460	11.18	12.19	
$\phi P$	0.151	0.161	3.84	4.08	
q	1.187 BSC		30.15 BSC		
R	0.495	0.525	12.58	13.33	
$R_1$	0.131	0.168	3.33	4.77	
s	0.655	0.675	16.64	17.14	

92CS-37523

## JEDEC TO-205AF



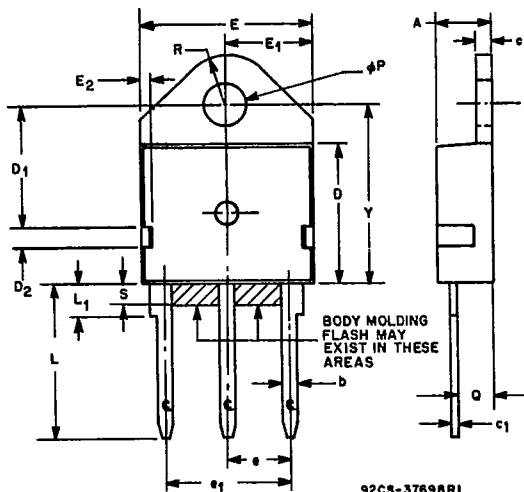
**Notes:**

- Dimension k measured from  $\phi D$  maximum.
- $\phi D_1$  shall not vary more than 0.010 in Zone P. This zone controlled for automatic handling.
- Details of outline in this zone optional.
- Leads at gauge plane 0.054-0.055 below seating plane shall be within 0.007 radius of positional tolerance at MMC relative to tab at MMC. Device may be measured by direct methods or by gauge and gauging procedure described on JEDEC gauge drawing GS-1.
- $\phi b_2$  applies between  $L_1$  and  $L_2$ .  $\phi b$  applies between  $L_2$  and L minimum. Diameter is uncontrolled in  $L_1$  and beyond L minimum.

SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN.	MAX.	MIN.	MAX.	
$\phi a$	0.200 BSC		5.08 BSC		4
A	0.160	0.180	4.07	4.57	
$\phi b$	0.016	0.021	0.41	0.53	5
$\phi b_2$	0.016	0.019	0.41	0.48	5
$\phi D$	0.340	0.370	8.64	9.39	
$\phi D_1$	0.315	0.355	8.01	9.01	2
h	0.009	0.041	0.23	1.04	
j	0.028	0.034	0.72	0.86	
k	0.029	0.045	0.74	1.14	1
L	0.500	0.750	12.70	19.05	5
$L_1$	—	0.050	—	1.27	5
$L_2$	0.250	—	6.35	—	5
P	0.070	—	—	1.78	3
Q	—	0.050	—	1.27	3
$\alpha$	45° NOMINAL				
$\beta$	80° NOMINAL				

92CS-36246R1

**JEDEC TO-218AC**



92CS-37698R1

SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	.165	.200	4.191	5.080	1
b	.040	.063	1.016	1.600	
c	.053	.065	1.346	1.651	
c <sub>1</sub>	.018	.030	.457	.762	
D	.485	.505	12.319	12.827	
D <sub>1</sub>	.395	.415	10.033	10.541	
D <sub>2</sub>	.070	.090	1.778	2.286	
E	.610	.640	15.494	16.256	
E <sub>1</sub>	.305	.320	7.747	8.128	
E <sub>2</sub>	.040	.060	1.016	1.524	
e	.205	.225	5.207	5.715	
e <sub>1</sub>	.420	.440	10.688	11.176	
L	.500	.610	12.700	15.494	
L <sub>1</sub>	—	.125	—	3.175	
phi P	.157	.167	3.988	4.241	
Q	.094	.126	2.388	3.200	
R	.170	.190	4.318	4.826	
S	—	0.60	—	1.524	
Y	.626	.670	15.900	17.018	

92CS-37698R1

Notes: U.com

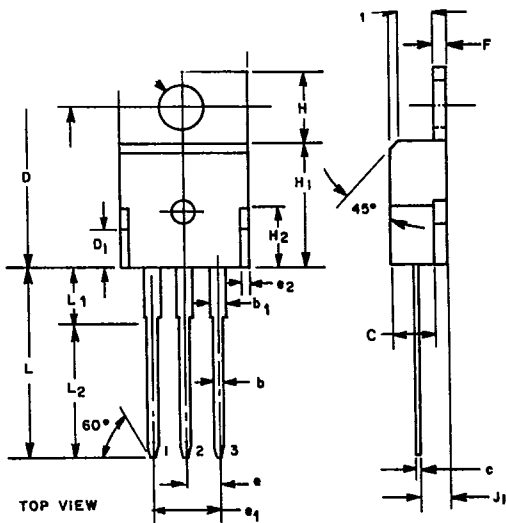
1: Tab outline optional within boundaries of dimensions E and R.

2: Lead dimensions uncontrolled in L<sub>1</sub>.

3: Controlling dimensions: inch.

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**JEDEC TO-220AB**



92CS-34697R1

SYMBOL	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
A	0.140	0.190	3.56	4.82
A <sub>1</sub>	0.080	0.085	2.03	2.16
b	0.020	0.045	0.51	1.14
b <sub>1</sub>	0.045	0.070	1.14	1.77
C	—	0.125	—	3.18
c	0.015	0.025	0.38	0.63
D	0.560	0.625	14.23	15.87
D <sub>1</sub>	—	0.100	—	2.54
E	0.380	0.420	9.66	10.66
e	0.090	0.110	2.29	2.79
e <sub>1</sub>	0.190	0.210	4.83	5.33
e <sub>2</sub>	—	0.030	—	0.76
F	0.045	0.055	1.14	1.39
H	0.230	0.270	5.85	6.85
H <sub>1</sub>	0.355	0.370	9.02	9.40
H <sub>2</sub>	—	0.160	—	4.06
J <sub>1</sub>	0.080	0.115	2.04	2.92
L	0.500	0.562	12.70	14.27
L <sub>1</sub>	—	0.250	—	6.35
L <sub>2</sub>	0.400	0.410	10.16	10.41
phi P	0.139	0.161	3.531	4.089
Q	0.100	0.120	2.54	3.04

NOTES:

1. Position of lead to be measured 0.250-0.255 in.

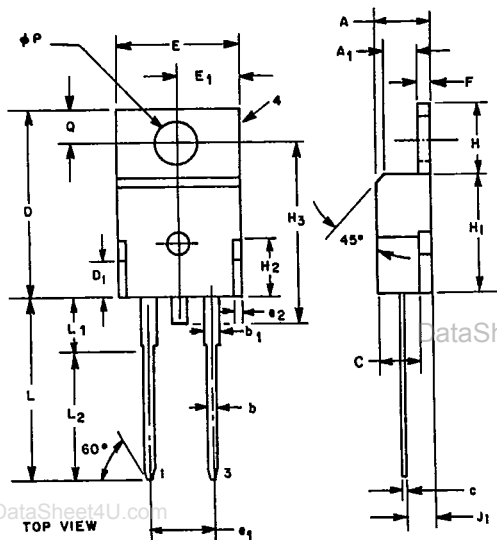
(6.350-6.477 mm) from case.

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92CS-34697R1

# Dimensional Outlines

JEDEC TO-220AC



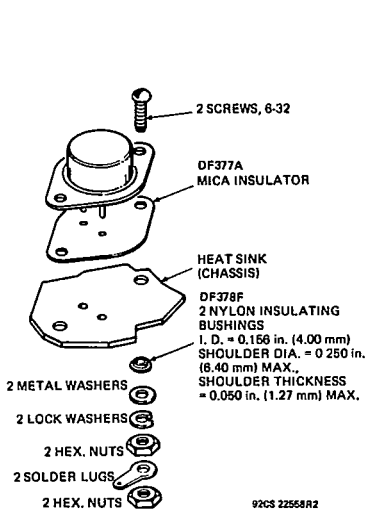
## NOTES:

1. Position of lead to be measured 0.250-0.255 in. (6.350-6.477 mm) from case.

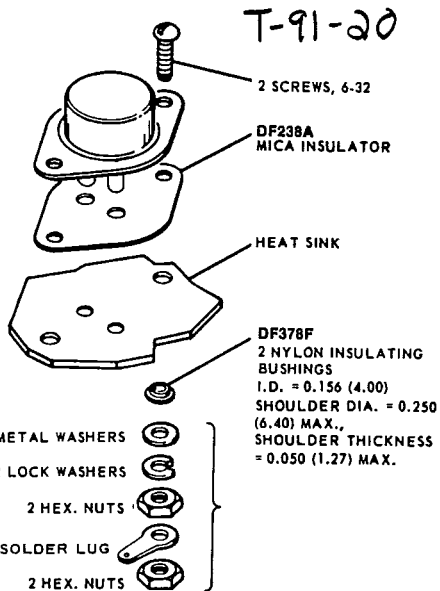
SYMBOL	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
A	0.140	0.190	3.56	4.82
A <sub>1</sub>	0.080	0.085	2.03	2.16
b	0.020	0.045	0.51	1.14
b <sub>1</sub>	0.045	0.070	1.14	1.77
C	—	0.125	—	3.18
c	0.015	0.025	0.38	0.63
D	0.560	0.625	14.23	15.87
D <sub>1</sub>	—	0.100	—	2.54
E	0.380	0.420	9.66	10.66
e <sub>1</sub>	0.190	0.210	4.83	5.33
e <sub>2</sub>	—	0.030	—	0.76
F	0.045	0.055	1.14	1.39
H	0.230	0.270	5.85	6.85
H <sub>1</sub>	0.355	0.370	9.02	9.40
H <sub>2</sub>	—	0.160	—	4.06
H <sub>3</sub>	—	0.600	—	15.24
J <sub>1</sub>	0.080	0.115	2.04	2.92
L	0.500	0.562	12.70	14.27
L <sub>1</sub>	—	0.250	—	6.35
L <sub>2</sub>	0.400	0.410	10.16	10.41
$\phi P$	0.139	0.161	3.531	4.089
Q	0.100	0.120	2.54	3.04

92CS-34830R1

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NOTE: MAXIMUM TORQUE APPLIED TO MOUNTING FLANGE IS 12 in.-lbs. (0.14 kgf-m)



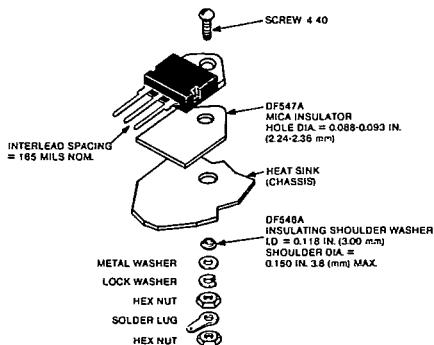
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Suggested mounting hardware for JEDEC TO-204AA  
(formerly JEDEC TO-3)

Suggested mounting hardware for JEDEC TO-204AE  
(formerly JEDEC TO-3)

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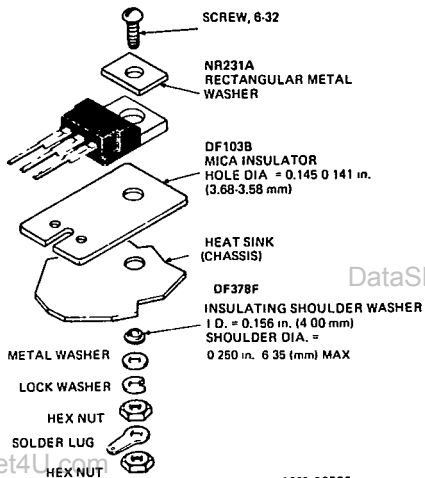
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Suggested mounting hardware for JEDEC TO-218AC

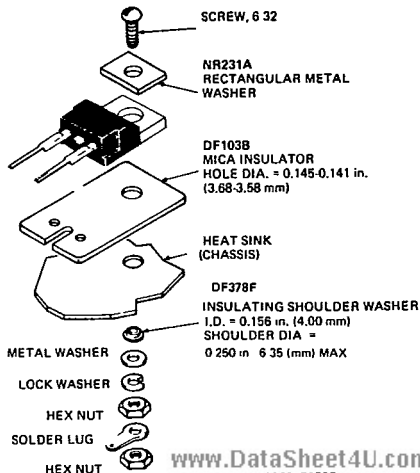
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92CS-39586

NOTE: MAXIMUM TORQUE APPLIED TO MOUNTING  
 FLANGE IS 8 in. lb. (0.09 kgf m)

**Suggested mounting hardware for JEDEC TO-220AB**



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 92CS-39587

NOTE: MAXIMUM TORQUE APPLIED TO MOUNTING  
 FLANGE IS 8 in. lb. (0.09 kgf m)

**Suggested mounting hardware for JEDEC TO-220AC**