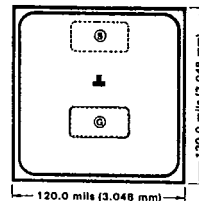


# N-Channel Enhancement-Mode Power Field-Effect Transistor Chip

50 V, 15 A, 0.14  $\Omega$

## 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-09382**
- **Device types that are derived from PCF15N05-**  
RFM15N05 RFP15N05  
RFM15N06 RFP15N06



ATTACH AREAS:  
 92C8-38990  
 Ⓢ 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

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## Electrical Characteristics at 25°C

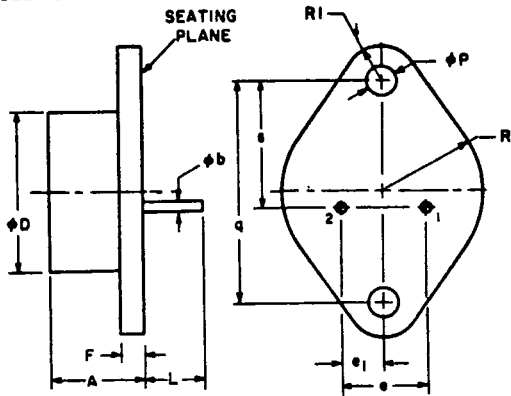
The chip is 100% probed to the actual conditions and limits specified.

Characteristic	Test Conditions	Limits		Units
		PCF15N05		
		Min.	Max.	
$BV_{DSS}$	$I_D = 1 \text{ mA}$ $V_{GS} = 0$	50	—	V
$V_{GS(TH)}$	$V_{GS} = V_{DS}$ $I_D = 1 \text{ mA}$	2	4	V
$I_{DSS}$	$V_{DS} = 40 \text{ V}$	—	1	$\mu\text{A}$
$I_{GSS}$	$V_{GS} = \pm 20 \text{ V}$ $V_{DS} = 0$	—	100	nA
$V_{DS(ON)}^a$	$I_D = 7.5 \text{ A}$ $V_{GS} = 10 \text{ V}$	—	1.05	V
$g_m^a$	$V_{DS} = 10 \text{ V}$ $I_D = 7.5 \text{ A}$	2	—	mho

<sup>a</sup>Pulsed; pulse duration = 300  $\mu\text{s}$  max., duty factor = 2%.

# Dimensional Outlines

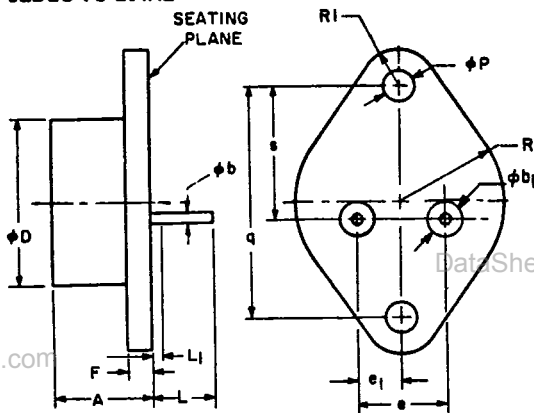
## JEDEC TO-204AA



SYMBOL	INCHES		MILLIMETERS		NOTE
	MIN.	MAX.	MIN.	MAX.	
A	0.250	0.450	6.4	11.4	
ϕb	0.038	0.043	0.966	1.092	
ϕD	—	0.875	—	22.22	
e	0.420	0.440	10.67	11.17	
e <sub>1</sub>	0.205	0.225	5.21	5.71	
F	—	0.135	—	3.42	
L	0.312	—	7.93	—	
ϕP	0.151	0.161	3.84	4.08	
q	1.187 BSC		30.15 BSC		
R	—	0.525	—	13.33	
R <sub>1</sub>	—	0.188	—	4.77	
s	0.655	0.675	16.64	17.14	

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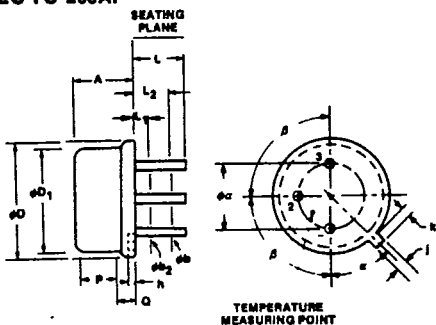
## JEDEC TO-204AE



SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	0.250	0.450	6.4	11.4	
ϕb	0.057	0.063	1.45	1.60	
ϕb <sub>1</sub>	0.141 NOM		3.58 NOM		
ϕD <sub>2</sub>	—	0.875	—	22.22	
e	0.420	0.440	10.67	11.17	
e <sub>1</sub>	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	
ϕP	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 <sub>1</sub>	0.131	0.168	3.33	4.77	
s	0.655	0.675	16.64	17.14	

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## JEDEC TO-205AF



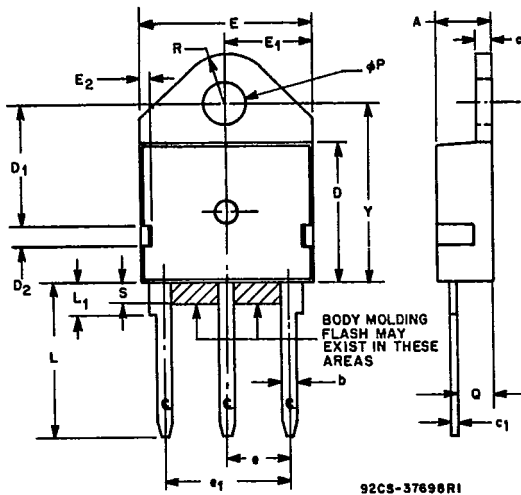
**Notes:**

- Dimension k measured from ϕD maximum.
- ϕD<sub>1</sub> 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.
- ϕb<sub>2</sub> applies between L<sub>1</sub> and L<sub>2</sub>. ϕb applies between L<sub>2</sub> and L minimum. Diameter is uncontrolled in L<sub>1</sub> and beyond L minimum.

SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN.	MAX.	MIN.	MAX.	
ϕe	0.200 BSC		5.08 BSC		4
A	0.160	0.180	4.07	4.57	
ϕb	0.016	0.021	0.41	0.53	5
ϕb <sub>2</sub>	0.016	0.019	0.41	0.48	5
ϕD	0.340	0.370	8.64	9.39	
ϕD <sub>1</sub>	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 <sub>1</sub>	—	0.050	—	1.27	5
L <sub>2</sub>	0.250	—	6.35	—	5
P	0.070	—	1.78	—	2
Q	—	0.050	—	1.27	3
α	45° NOMINAL				
β	90° NOMINAL				

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## JEDEC TO-218AC



## Notes:

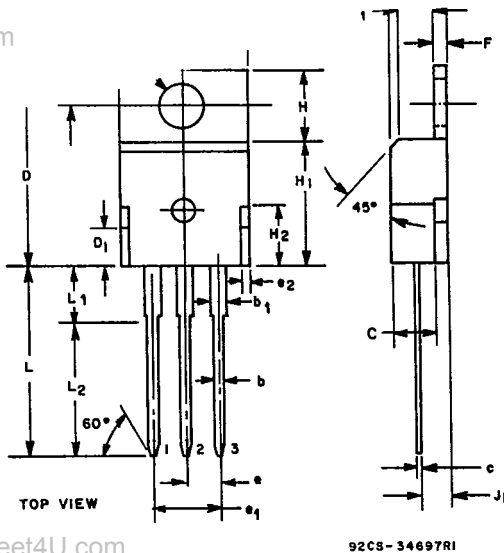
- 1: Tab outline optional within boundaries of dimensions E and R.
- 2: Lead dimensions uncontrolled in L<sub>1</sub>.
- 3: Controlling dimensions: inch.

SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	.165	.200	4.191	5.080	
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	1
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	10.668	11.176	
L	.500	.610	12.700	15.494	
L <sub>1</sub>	—	.125	—	3.175	2
ϕP	.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	

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## JEDEC TO-220AB



## NOTES:

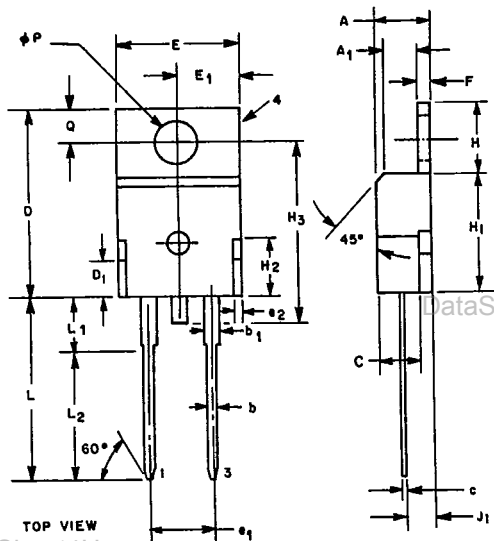
1. Position of lead to be measured 0.250-0.255 in. (6.350-6.477 mm) from case.

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	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
ϕP	0.139	0.161	3.531	4.089
Q	0.100	0.120	2.54	3.04

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# Dimensional Outlines

## JEDEC TO-220AC



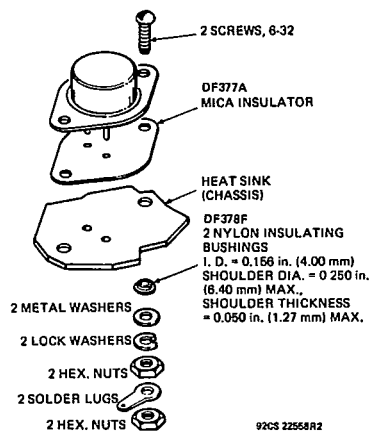
### NOTES:

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

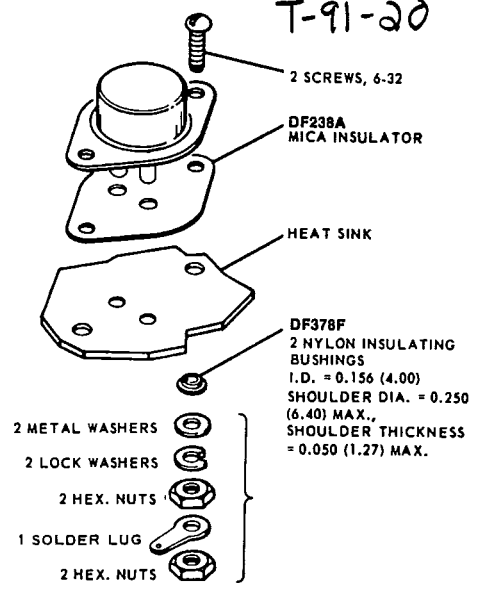
SYMBOL	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
A	0.140	0.190	3.56	4.82
A <sub>1</sub>	0.080	0.085	2.03	2.16
b	0.020	0.045	0.51	1.14
b <sub>1</sub>	0.045	0.070	1.14	1.77
C	—	0.125	—	3.18
c	0.015	0.025	0.38	0.63
D	0.560	0.825	14.23	15.87
D <sub>1</sub>	—	0.100	—	2.54
E	0.380	0.420	9.66	10.66
e <sub>1</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
φP	0.139	0.161	3.531	4.089
Q	0.100	0.120	2.54	3.04

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T-91-20



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



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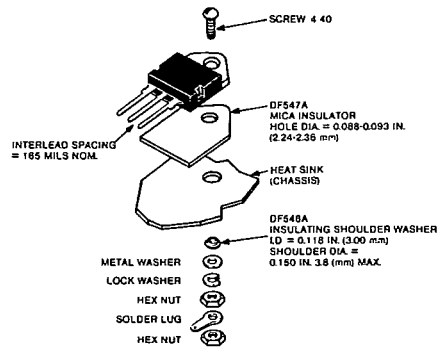
92CS-2154R1

**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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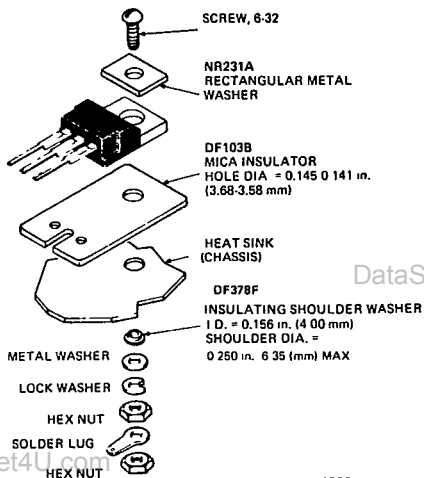


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**Suggested mounting hardware for JEDEC TO-218AC**

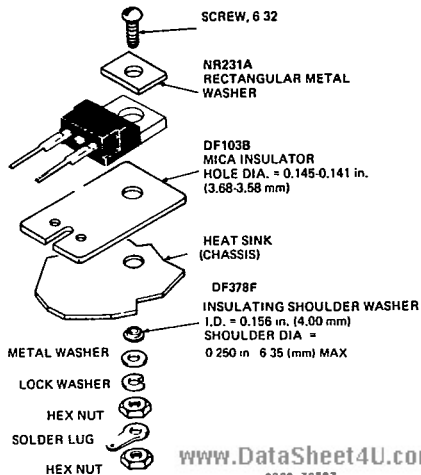
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92CS-39586

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

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



92CS-39587

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

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