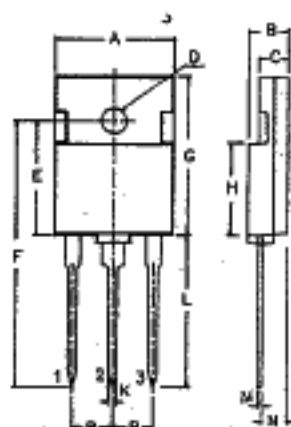
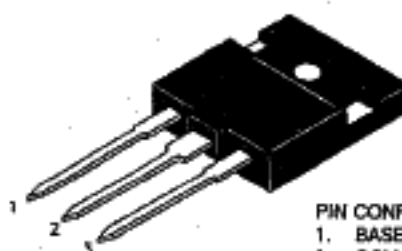


TO-3P Fully Isolated Plastic Package Transistors CDI



| DIM | MIN. | MAX. |
|-----|-------|-------|
| A | 17.75 | 18.25 |
| B | 5.2 | 5.7 |
| C | 3.8 | 4.2 |
| D | Ø 1.9 | Ø 2.1 |
| E | 14.50 | 15.10 |
| F | 33.25 | 36.75 |
| G | 20.75 | 21.25 |
| H | 11.50 | 12.25 |
| K | 1.0 | 1.30 |
| L | 18.75 | 21.65 |
| M | 0.40 | 0.60 |
| N | 3.15 | 3.45 |
| P | 5.21 | 5.72 |

ALL DIMENSIONS ARE IN M.M.



PIN CONFIGURATION

1. BASE
2. COLLECTOR
3. EMITTER

TO BE MOUNTED WITH SILICONE GREASE ON THE BACK SIDE, ENSURING BACK SIDE HOLES FILLED.

| Type No. | Polarity | Maximum Ratings | | | | | | Electrical Characteristics (Ta = 25°C, Unless Otherwise Specified) | | | | | | | | | |
|------------------------|----------|-----------------------------|-----------------------------|-----------------------------|--------------------------------|--------------------|---------------------|--|---------------------|------------------------|------------------------|--------------------|---------------------|---------------------------------|--------------------|-----------------------------|-----------------------------|
| | | V _{CEO} (V) Min | V _{CE0} (V) Min | V _{ES0} (V) Min | P _D (W) @Tc=25°C | I _C (A) | I _{CM} (A) | I _{CES} (mA) Max | V _{CE} (V) | f _{TC} Min | f _{TC} Max | I _C (A) | V _{CE} (V) | V _{CE(sat)} (V) Max | I _C (A) | C _{ob} (pF) Typ | f _T (MHz) Typ |
| BU426AF | NPN | 900 [†] | 400 | 10 | 70 | 6 | 8 | 1000 | 900 | 20 | 60 | 0.6 | 5 | 3 | 4 | | 10 |
| BU426F | NPN | 800 [†] | 375 | 10 | 70 | 6 | 8 | 1000 | 800 | 20 | 60 | 0.6 | 5 | 3 | 4 | | 10 |
| BU908F | NPN | 1500 [†] | 700 | 5 | 34 | 8 | 15 | 800 | 1500 | 20 | 60 | 0.6 | 5 | 2 | 3.2 | 125 | 7 |
| CSB817F | PNP | 180 | 140 | 6 | 90 | 12 | | 100 [‡] | 80 | 20 | 200 | 1.0 | 5 | 2.5 | 5 | 300 | 15 |
| CSB817OF | PNP | 160 | 140 | 6 | 90 | 12 | | 100 [‡] | 80 | 20 | 120 | 1 | 5 | 2.5 | 5 | 300 | 15 |
| CSB817YF | PNP | 180 | 140 | 6 | 90 | 12 | | 100 [‡] | 80 | 20 | 200 | 1 | 5 | 2.5 | 5 | 300 | 15 |
| CSA1301F | PNP | 160 | 160 | 5 | 90 | 12 | | 5 [‡] | 160 | 28 | 200 | 1.0 | 5 | 2.8 | 8 | 480 | 30 |
| CSA1301OF | PNP | 160 | 160 | 5 | 90 | 12 | | 5 [‡] | 160 | 28 | 200 | 1 | 5 | 2.8 | 8 | 480 | 30 |
| CSA1301RF | PNP | 160 | 160 | 5 | 90 | 12 | | 5 [‡] | 160 | 28 | 110 | 1 | 5 | 2.8 | 8 | 480 | 30 |
| CSA1302F [Ⓞ] | PNP | 200 | 200 | 5 | 90 | 15 | | 5 [‡] | 200 | 25 | 200 | 1.0 | 5 | 3.2 | 10 | 470 | 25 |
| CSA1302OF [Ⓞ] | PNP | 200 | 200 | 5 | 90 | 15 | | 5 [‡] | 200 | 25 | 200 | 1 | 5 | 3.2 | 10 | 470 | 25 |
| CSA1302RF [Ⓞ] | PNP | 200 | 200 | 5 | 90 | 15 | | 5 [‡] | 200 | 25 | 110 | 1 | 5 | 3.2 | 10 | 470 | 25 |
| CSC3280F | NPN | 160 | 160 | 5 | 90 | 12 | | 5 [‡] | 160 | 28 | 200 | 1.0 | 5 | 2 | 8 | 220 | 30 |
| CSC3280OF | NPN | 160 | 160 | 5 | 90 | 12 | | 5 [‡] | 160 | 28 | 200 | 1 | 5 | 2 | 8 | 220 | 30 |
| CSC3280RF | NPN | 160 | 160 | 5 | 90 | 12 | | 5 [‡] | 160 | 28 | 110 | 1 | 5 | 2 | 8 | 220 | 30 |
| CSC3281F [Ⓞ] | NPN | 200 | 200 | 5 | 90 | 15 | | 5 [‡] | 200 | 25 | 200 | 1.0 | 5 | 3 | 10 | 270 | 30 |

[†] Flash over current, non-repetitive Max 5 A [‡] I_{CE} [Ⓞ] under development

CDIL TO-3P Fully Isolated Plastic Package Transistors

| Maximum Ratings | | | | | | | | Electrical Characteristics (T _a = 25°C, Unless Otherwise Specified) | | | | | | | | |
|------------------------|----------|--------------------------------|--------------------------------|--------------------------------|--|-----------------------|------------------------|--|------------------------|------------------------|------------------------|-----------------------|------------------------|------------------------------------|-----------------------|--------------------------------|
| Type No. | Polarity | V _{CEO} (V) Min | V _{CSO} (V) Min | V _{ESD} (V) Min | P _D (W) @T _C =25°C | I _C (A) | I _{CM} (A) | I _{CS} (mA) Max | V _{CE} (V) | h _{FE} Min | h _{FE} Max | I _C (A) | V _{CE} (V) | V _{CE(sat)} (V) Max | I _C (A) | C _{ob} (pF) Typ |
| CSC32810P [Ⓢ] | NPN | 200 | 200 | 5 | 90 | 15 | | 5 [Ⓢ] | 200 | 80 25 | 180 | 1 8 | 5 5 | 3 | 10 | 270 |
| CSC3281R [Ⓢ] | NPN | 200 | 200 | 5 | 90 | 15 | | 5 [Ⓢ] | 200 | 55 25 | 110 | 1 8 | 5 5 | 3 | 10 | 270 |
| CSD1047F | NPN | 160 | 140 | 6 | 90 | 12 | | 100 [Ⓢ] | 80 | 60 20 | 200 | 1 6 | 5 5 | 2.5 | 5 | 210 |
| CSD1047OF | NPN | 160 | 140 | 6 | 90 | 12 | | 100 [Ⓢ] | 80 | 60 20 | 120 | 1 6 | 5 5 | 2.5 | 5 | 210 |
| CSD1047YF | NPN | 160 | 140 | 6 | 90 | 12 | | 100 [Ⓢ] | 80 | 100 20 | 200 | 1 6 | 5 5 | 2.5 | 5 | 210 |
| CSD1426F | NPN | 1500 | 800 | 5 | 34 | 3.5 | | 10 [Ⓢ] | 500 | 8 | | 0.5 | 5 | 8 | 3 | 95 |
| TIP33AF | NPN | 60 | 60 | 5 | 80 | 10 | 15 | 400 | 60 | 20 40 | 100 | 3 1 | 4 4 | 1 4 | 3 10 | |
| TIP33BF | NPN | 80 | 80 | 5 | 80 | 10 | 15 | 400 | 80 | 20 40 | 100 | 3 1 | 4 4 | 1 4 | 3 10 | |
| TIP33CF | NPN | 100 | 100 | 5 | 80 | 10 | 15 | 400 | 100 | 20 40 | 100 | 3 1 | 4 4 | 1 4 | 3 10 | |
| TIP33F | NPN | 40 | 40 | 5 | 80 | 10 | 15 | 400 | 40 | 20 40 | 100 | 3 1 | 4 4 | 1 4 | 3 10 | |
| TIP34AF | PNP | 60 | 60 | 5 | 80 | 10 | 15 | 400 | 60 | 20 40 | 100 | 3 1 | 4 4 | 1 4 | 3 10 | |
| TIP34BF | PNP | 80 | 80 | 5 | 80 | 10 | 15 | 400 | 80 | 20 40 | 100 | 3 1 | 4 4 | 1 4 | 3 10 | |
| TIP34CF | PNP | 100 | 100 | 5 | 80 | 10 | 15 | 400 | 100 | 20 40 | 100 | 3 1 | 4 4 | 1 4 | 3 10 | |
| TIP34F | PNP | 40 | 40 | 5 | 80 | 10 | 15 | 400 | 40 | 20 40 | 100 | 3 1 | 4 4 | 1 4 | 3 10 | |
| TIP140F | NPN | 60 | 60 | 5 | 60 | 10 | 20 | 1000 [Ⓢ] | 60 | 1000 500 | | 5 10 | 4 4 | 2 3 | 5 10 | |
| TIP141F | NPN | 80 | 80 | 5 | 60 | 10 | 20 | 1000 [Ⓢ] | 80 | 1000 500 | | 5 10 | 4 4 | 2 3 | 5 10 | |
| TIP142F | NPN | 100 | 100 | 5 | 60 | 10 | 20 | 1000 [Ⓢ] | 100 | 1000 500 | | 5 10 | 4 4 | 2 3 | 5 10 | |
| TIP145F | PNP | 60 | 60 | 5 | 60 | 10 | 20 | 1000 [Ⓢ] | 60 | 1000 500 | | 5 10 | 4 4 | 2 3 | 5 10 | |
| TIP146F | PNP | 80 | 80 | 5 | 60 | 10 | 20 | 1000 [Ⓢ] | 80 | 1000 500 | | 5 10 | 4 4 | 2 3 | 5 10 | |
| TIP147F | PNP | 100 | 100 | 5 | 60 | 10 | 20 | 1000 [Ⓢ] | 100 | 1000 500 | | 5 10 | 4 4 | 2 3 | 5 10 | |
| TIP2955F | PNP | 100 | 60 | 7 | 90 | 15 | | 1000 [Ⓢ] | 70 | 20 5 | 70 | 4 10 | 4 4 | 1.1 3 | 4 10 | |
| TIP2955HVF | PNP | 120 | 100 | 7 | 60 | 15 | | 5000 ^{**} | 100 | 20 5 | 100 | 4 10 | 4 4 | 1.1 3 | 4 10 | |
| TIP3055F | NPN | 100 | 80 | 7 | 90 | 15 | | 1000 [Ⓢ] | 70 | 20 5 | 150 | 4 10 | 4 4 | 3 3 | 10 10 | |
| TIP3055HVF | NPN | 120 | 120 | 7 | 60 | 15 | | 5000 ^{**} | 100 | 20 5 | 100 | 4 10 | 4 4 | 1.1 3 | 4 10 | |

* Flash over current, non-repetitive Max 5 A [Ⓢ]=I_{CM} Min [Ⓢ]=I_{CSO} [Ⓢ]=I_{CE} ^{**}=I_{CEV} Ⓢ under development