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# LA733P

# Amplifier Transistors

## PNP Silicon

ON Semiconductor®

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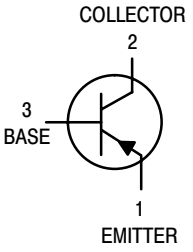
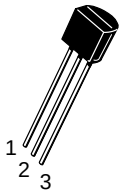



**TO–92**
**CASE 29**
**STYLE 14**

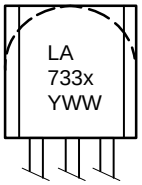
### MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|---|---|---|---|
| Collector-Emitter Voltage | $V_{CEO}$ | –48 | Vdc |
| Collector-Base Voltage | $V_{CBO}$ | –60 | Vdc |
| Emitter-Base Voltage | $V_{EBO}$ | –5.0 | Vdc |
| Collector Current – Continuous | $I_C$ | –100 | mAdc |
| Total Device Dissipation<br>@ $T_A$ = 25°C<br>Derate above 25°C | $P_D$ | <br>625<br>5.0 | <br>mW<br>mW/°C |
| Total Device Dissipation<br>@ $T_C$ = 25°C<br>Derate above 25°C | $P_D$ | <br>1.5<br>12 | <br>Watts<br>mW/°C |
| Operating and Storage Junction Temperature Range | $T_J$, $T_{stg}$ | –55 to +150 | °C |

### THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|---|---|---|---|
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 200 | °C/W |
| Thermal Resistance, Junction to Case | $R_{\theta JC}$ | 83.3 | °C/W |

### MARKING DIAGRAM




LA733x = Specific Device Code
x = P
Y = Year
WW = Work Week

### ORDERING INFORMATION

| Device | Package | Shipping |
|---|---|---|
| LA733P | TO–92 | 5000 Units/Box |

**ELECTRICAL CHARACTERISTICS** ($T_A$ = 25°C unless otherwise noted)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| Collector–Emitter Breakdown Voltage ($I_C$ = –1.0 mAdc, $I_B$ = 0) | $V_{(BR)CEO}$ | –48 | – | – | Vdc |
| Collector–Base Breakdown Voltage ($I_C$ = –10 μAdc, $I_E$ = 0) | $V_{(BR)CBO}$ | –60 | – | – | Vdc |
| Emitter–Base Breakdown Voltage ($I_E$ = –10 μAdc, $I_C$ = 0) | $V_{(BR)EBO}$ | –5.0 | – | – | Vdc |
| Collector–Base Leakage Current ($V_{CB}$ = –60 V) | $I_{CBO}$ | – | – | –100 | nAdc |
| Emitter–Base Leakage Current ($V_{EB}$ = –5.0 V, $I_C$ = 0) | $I_{EBO}$ | – | – | –100 | nAdc |
| Collector–Emitter Leakage Current ($V_{CE}$ = –50 V) | $I_{CEO}$ | – | – | –1.0 | μA |
| **ON CHARACTERISTICS** | | | | | |
| DC Current Gain ($I_C$ = –1.0 mAdc, $V_{CE}$ = –6.0 Vdc) | $h_{FE}$ | 200 | – | 400 | – |
| Collector–Emitter Saturation Voltage ($I_C$ = –10 mAdc, $I_B$ = –1.0 mAdc) | $V_{CE(sat)}$ | – | – | –0.3 | Vdc |
| Base–Emitter Saturation Voltage ($I_C$ = –10 mAdc, $I_B$ = –1.0 mAdc) | $V_{BE(sat)}$ | – | – | –0.9 | Vdc |
| Base–Emitter On Voltage ($I_C$ = –1.0 mAdc, $V_{CE}$ = –6.0 Vdc) | $V_{BE(on)}$ | –0.55 | – | –0.68 | Vdc |
| **DYNAMIC CHARACTERISTICS** | | | | | |
| Current–Gain – Bandwidth Product ($I_C$ = –10 mAdc, $V_{CE}$ = –6.0 Vdc, f = 20 MHz) | $f_T$ | 100 | – | 450 | MHz |
| Common–Base Output Capacitance ($V_{CB}$ = –60 Vdc, $I_C$ = 0, f = 1.0 MHz) | $C_{ob}$ | – | – | 7.0 | pF |
| Noise Figure ($I_C$ = –0.3 mAdc, $V_{CE}$ = –6.0 Vdc, $R_G$ = 10 kΩ, f = 100 mHz) | nF | – | – | 18 | dB |

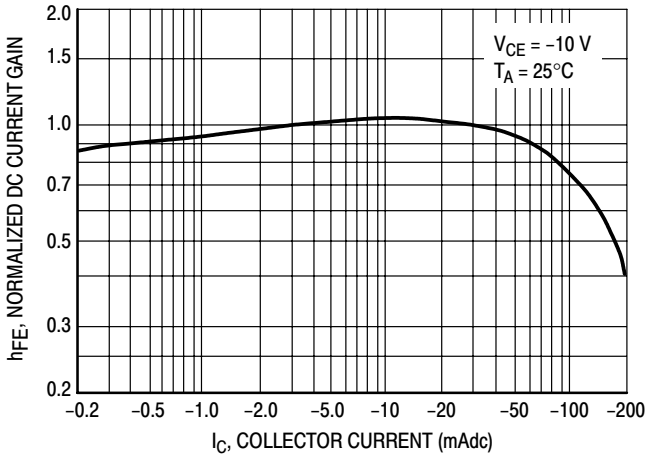



**Figure 1. Normalized DC Current Gain**

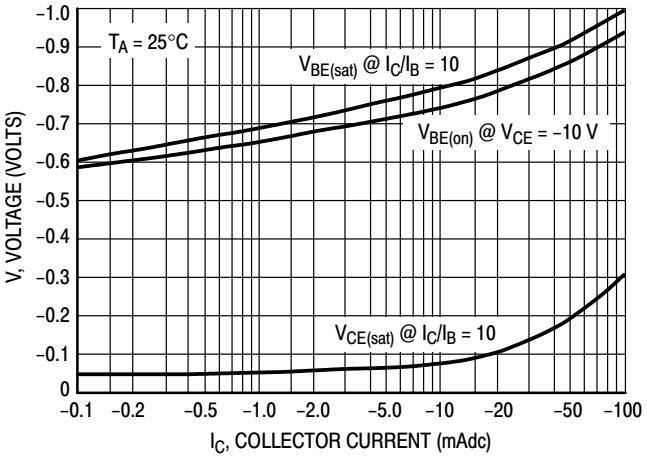



**Figure 2. “Saturation” and “On” Voltages**

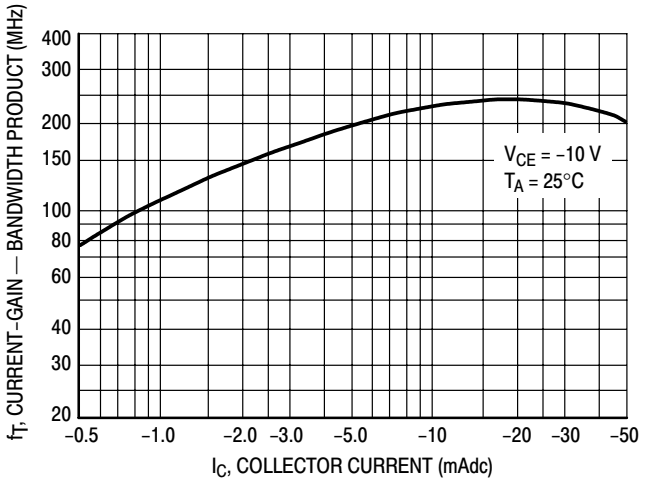



**Figure 3. Current–Gain — Bandwidth Product**

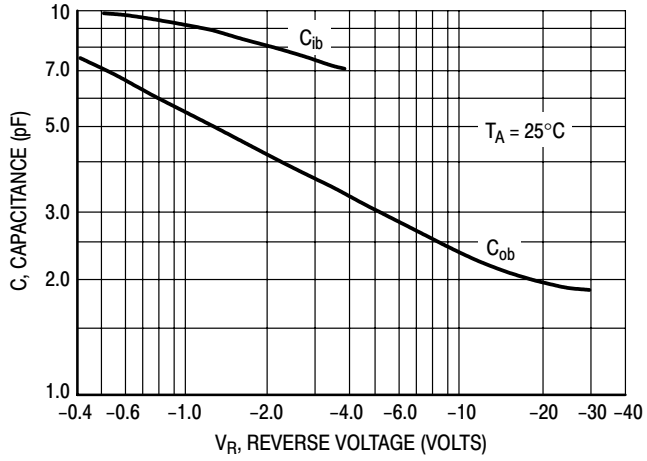



**Figure 4. Capacitances**

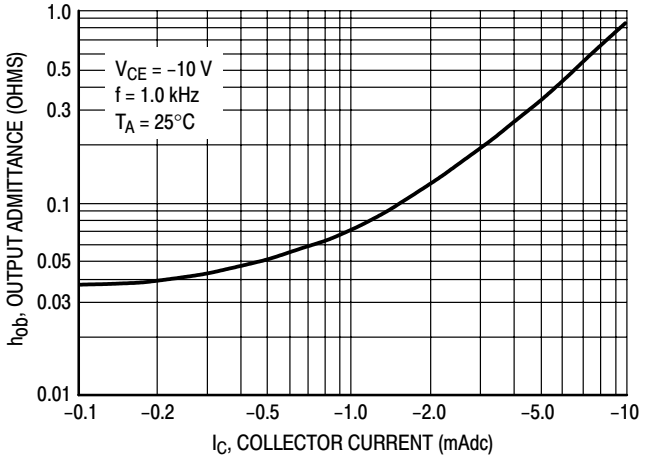



**Figure 5. Output Admittance**

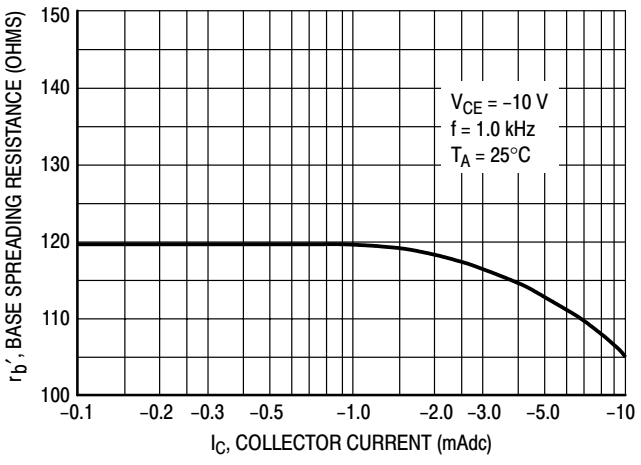
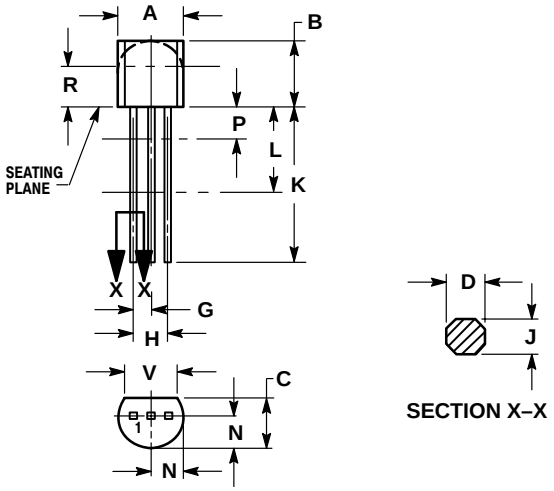



**Figure 6. Base Spreading Resistance**

# LA733P

## PACKAGE DIMENSIONS

**TO–92 (TO–226)**
CASE 29–11
ISSUE AL




NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

| | INCHES | | MILLIMETERS | |
|---|---|---|---|---|
| DIM | MIN | MAX | MIN | MAX |
| A | 0.175 | 0.205 | 4.45 | 5.20 |
| B | 0.170 | 0.210 | 4.32 | 5.33 |
| C | 0.125 | 0.165 | 3.18 | 4.19 |
| D | 0.016 | 0.021 | 0.407 | 0.533 |
| G | 0.045 | 0.055 | 1.15 | 1.39 |
| H | 0.095 | 0.105 | 2.42 | 2.66 |
| J | 0.015 | 0.020 | 0.39 | 0.50 |
| K | 0.500 | --- | 12.70 | --- |
| L | 0.250 | --- | 6.35 | --- |
| N | 0.080 | 0.105 | 2.04 | 2.66 |
| P | --- | 0.100 | --- | 2.54 |
| R | 0.115 | --- | 2.93 | --- |
| V | 0.135 | --- | 3.43 | --- |

STYLE 14:
PIN 1. EMITTER
2. COLLECTOR
3. BASE



## PUBLICATION ORDERING INFORMATION

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