

TL/G/10038-42

### DESCRIPTION

Process 76 is a non-overlay, planar epitaxial silicon transistor with a field plate. Complement to Process 48.

### APPLICATION

This device was designed for high voltage driver applications.

### PRIMARY DEVICE TYPES

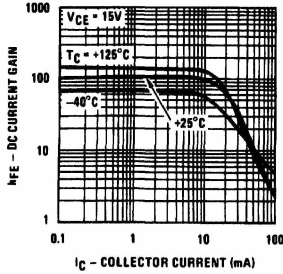
**TO-226 EBC:** MPSW92

**TO-92 EBC:** MPSA92

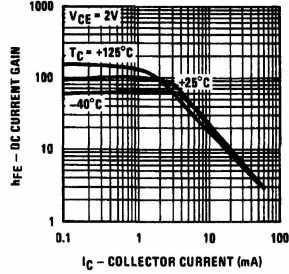
### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

| Symbol                          | Conditions  | Min      | Typ            | Max | Units            |
|---------------------------------|---|----------|----------------|-----|------------------|
| $BV_{CEO}$                      | $I_C = 1 \text{ mA}$ (Note 1)   | 220      | 300            |     | V                |
| $BV_{CES}$                      | $I_C = 0.1 \text{ mA}$  |          | 350            |     | V                |
| $BV_{EBO}$                      | $I_E = 0.1 \text{ mA}$  | 6        |                |     | V                |
| $I_{CES}$                       | $V_{CE} = 150\text{V}$  |          |                | 200 | nA               |
| $I_{EBO}$                       | $V_{EB} = 5\text{V}$  |          |                | 100 | nA               |
| $h_{FE}$                        | $V_{CE} = 15\text{V}, I_C = 0.1 \text{ mA}$<br>$V_{CE} = 15\text{V}, I_C = 25 \text{ mA}$<br>$V_{CE} = 15\text{V}, I_C = 50 \text{ mA}$ | 40       | 70<br>80<br>50 | 200 |                  |
| $V_{CE(SAT)}$                   | $I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$   |          | 0.3            | 1.0 | V                |
| $V_{BE(SAT)}$                   | $I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$   |          | 0.8            |     | V                |
| $f_T$                           | $V_{CE} = 15\text{V}, I_C = 10 \text{ mA}, f = 20 \text{ MHz}$  | 50       | 100            |     | MHz              |
| $C_{ob}$                        | $V_{CB} = 10\text{V}, f = 1 \text{ MHz}$  |          | 8              |     | pF               |
| $P_{D(max)}$<br>TO-226<br>TO-92 | $T_A = 25^\circ\text{C}$<br>$T_A = 25^\circ\text{C}$  | 1<br>600 |                |     | W<br>mW          |
| $T_{J(max)}$                    | All Plastic Parts   |          |                | 150 | $^\circ\text{C}$ |

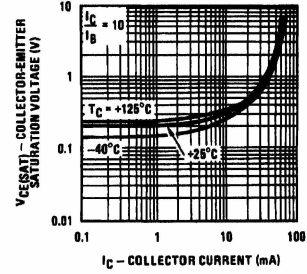
**DC Current Gain vs Collector Current**



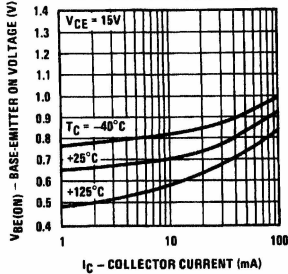
**Pulsed Current Gain vs Collector Current**



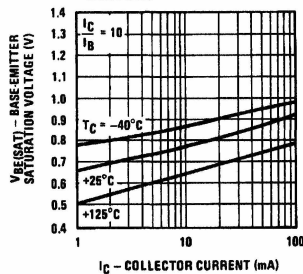
**Collector-Emitter Saturation Voltage vs Collector Current**



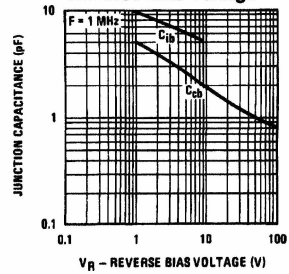
**Base-Emitter ON Voltage vs Collector Current**



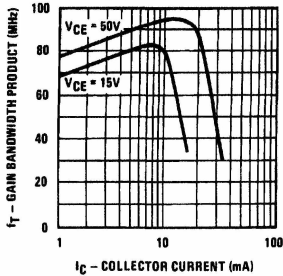
**Base-Emitter Saturation Voltage vs Collector Current**



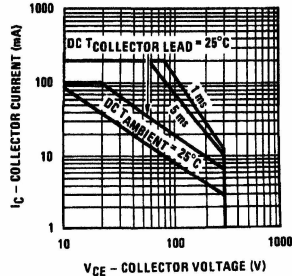
**Junction Capacitance vs Reverse Bias Voltage**



**Gain Bandwidth Product vs Collector Current**



**Safe Operating Area TO-226**



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