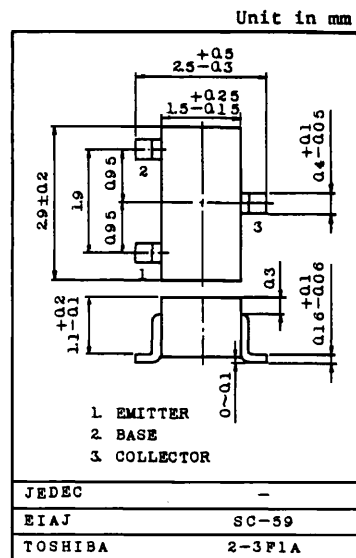


FOR GENERAL PURPOSE USE SWITCHING AND AMPLIFIER APPLICATIONS.

## FEATURES:

- Low Leakage Current  
:  $I_{CEV}=50\text{nA}(\text{Max.})$ ,  $I_{BEV}=50\text{nA}(\text{Max.})$   
@  $V_{CE}=30\text{V}$ ,  $V_{BE}=3\text{V}$
- Excellent DC Current Gain Linearity
- Low Saturation Voltage  
:  $V_{CE(\text{sat})}=0.3\text{V}(\text{Max.})$  @  $I_C=50\text{mA}$ ,  $I_B=5\text{mA}$
- Low Collector Output Capacitance  
:  $C_{ob}=4\text{pF}(\text{Max.})$  @  $V_{CB}=5\text{V}$
- Complementary to YTS3906



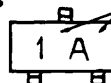
Weight : 0.012g

MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ )

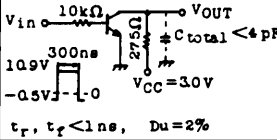
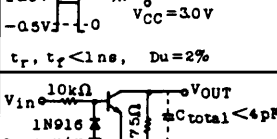
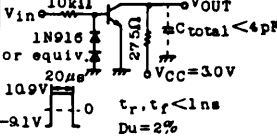
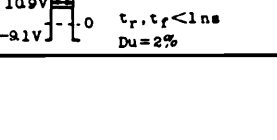
| CHARACTERISTIC                                                                               | SYMBOL        | RATING    | UNIT                      |
|----------------------------------------------------------------------------------------------|---------------|-----------|---------------------------|
| Collector-Base Voltage                                                                       | $V_{CBO}$     | 60        | V                         |
| Collector-Emitter Voltage                                                                    | $V_{CEO}$     | 40        | V                         |
| Emitter-Base Voltage                                                                         | $V_{EBO}$     | 6         | V                         |
| Collector Current                                                                            | $I_C$         | 200       | mA                        |
| Base Current                                                                                 | $I_B$         | 50        | mA                        |
| Collector Power Dissipation<br>( $T_a=25^\circ\text{C}$ ) Derate Linearly $25^\circ\text{C}$ | $P_C$         | 625       | mW                        |
|                                                                                              |               | 1.6       | mW/ $^\circ\text{C}$      |
| Thermal Resistance<br>(Junction to Ambient)                                                  | $R_{th(j-a)}$ | 625       | $^\circ\text{C}/\text{W}$ |
| Junction Temperature                                                                         | $T_j$         | 150       | $^\circ\text{C}$          |
| Storage Temperature                                                                          | $T_{stg}$     | -55 ~ 150 | $^\circ\text{C}$          |

Marking

Type Name



## ELECTRICAL CHARACTERISTICS (Ta=25°C)

| CHARACTERISTIC                       |              | SYMBOL   | TEST CONDITION                                                                      | MIN. | TYP. | MAX. | UNIT              |
|--------------------------------------|--------------|----------|-------------------------------------------------------------------------------------|------|------|------|-------------------|
| Collector Cut-off Current            |              | ICEV     | VCE=30V, VBE=-3V                                                                    | -    | -    | 50   | nA                |
| Base Cut-off Current                 |              | IBEV     | VCE=30V, VBE=-3V                                                                    | -    | -    | -50  | nA                |
| Collector-Base Breakdown Voltage     |              | V(BR)CBO | IC=10μA, IE=0                                                                       | 60   | -    | -    | V                 |
| Collector-Emitter Breakdown Voltage  |              | V(BR)CEO | IC=1mA, IB=0                                                                        | 40   | -    | -    | V                 |
| Emitter-Base Breakdown Voltage       |              | V(BR)EBO | IE=10μA, IC=0                                                                       | 6    | -    | -    | V                 |
| DC Current Gain                      | hFE(1)       |          | VCE=1V, IC=0.1mA                                                                    | 40   | -    | -    |                   |
|                                      | hFE(2)       |          | VCE=1V, IC=1mA                                                                      | 70   | -    | -    |                   |
|                                      | hFE(3)       |          | VCE=1V, IC=10mA                                                                     | 100  | -    | 300  |                   |
|                                      | hFE(4)       |          | VCE=1V, IC=50mA                                                                     | 60   | -    | -    |                   |
|                                      | hFE(5)       |          | VCE=1V, IC=100mA                                                                    | 30   | -    | -    |                   |
| Collector-Emitter Saturation Voltage | VCE(sat)1    |          | IC=10mA, IB=1mA                                                                     | -    | -    | 0.2  | V                 |
|                                      | VCE(sat)2    |          | IC=50mA, IB=5mA                                                                     | -    | -    | 0.3  |                   |
| Base-Emitter Saturation Voltage      | VBE(sat)1    |          | IC=10mA, IB=1mA                                                                     | 0.65 | -    | 0.85 | V                 |
|                                      | VBE(sat)2    |          | IC=50mA, IB=5mA                                                                     | -    | -    | 0.95 |                   |
| Transition Frequency                 | fT           |          | VCE=20V, IC=10mA<br>f=100MHz                                                        | 300  | -    | -    | MHz               |
| Collector Output Capacitance         | Cob          |          | VCE=5V, IE=0, f=1MHz                                                                | -    | -    | 4    | pF                |
| Input Capacitance                    | Cib          |          | VEB=0.5V, IC=0, f=1MHz                                                              | -    | -    | 8    | pF                |
| Input Impedance                      | hie          |          | VCE=10V, IC=1mA<br>f=1kHz                                                           | 1.0  | -    | 10   | kΩ                |
| Voltage Feedback Ratio               | hre          |          |                                                                                     | 0.5  | -    | 8    | ×10 <sup>-4</sup> |
| Small-Signal Current Gain            | hfe          |          |                                                                                     | 100  | -    | 400  |                   |
| Collector Output Admittance          | hoe          |          |                                                                                     | 1.0  | -    | 40   | μS                |
| Noise Figure                         | NF           |          | VCE=5V, IC=0.1mA<br>RG=1kΩ, f=10Hz ~ 15.7kHz                                        | -    | -    | 5    | dB                |
| Switching Time                       | Delay Time   | td       |  | -    | -    | 35   | ns                |
|                                      | Rise Time    | tr       |  | -    | -    | 35   |                   |
|                                      | Storage Time | tstg     |  | -    | -    | 200  |                   |
|                                      | Fall Time    | tf       |  | -    | -    | 50   |                   |