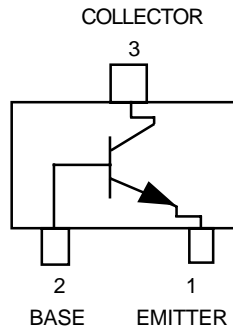


# NPN General Purpose Amplifier Transistors Surface Mount



**MSD601-RT1**  
**MSD601-ST1**



CASE 318D-03, STYLE1  
SC-59

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

Rating	Symbol	Value	Unit
Collector-Base Voltage	$V_{(BR)CBO}$	60	Vdc
Collector-Emitter Voltage	$V_{(BR)CEO}$	50	Vdc
Emitter-Base Voltage	$V_{(BR)EBO}$	7.0	Vdc
Collector Current-Continuous	$I_C$	100	mAdc
Collector Current-Peak	$I_{C(P)}$	200	mAdc

## THERMAL CHARACTERISTICS

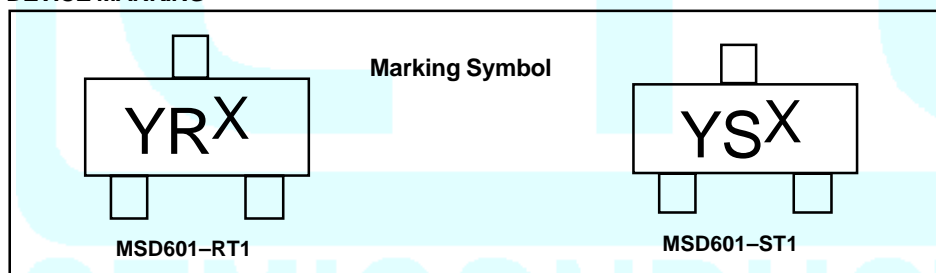
Characteristic	Symbol	Max	Unit
Power Dissipation	$P_D$	200	mW
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 ~ +150	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Max	Unit
Collector-Emitter Breakdown Voltage ( $I_C = 2.0 \text{ mAdc}$ , $I_B = 0$ )	$V_{(BR)CEO}$	50	—	Vdc
Collector-Base Breakdown Voltage ( $I_C = 10 \mu\text{Adc}$ , $I_E = 0$ )	$V_{(BR)CBO}$	60	—	Vdc
Emitter-Base Breakdown Voltage ( $I_E = 10 \mu\text{Adc}$ , $I_C = 0$ )	$V_{(BR)EBO}$	7.0	—	Vdc
Collector-Base Cutoff Current ( $V_{CB} = 45 \text{ Vdc}$ , $I_E = 0$ )	$I_{CBO}$	—	0.1	$\mu\text{Adc}$
Collector-Emitter Cutoff Current ( $V_{CE} = 10 \text{ Vdc}$ , $I_B = 0$ )	$I_{CEO}$	—	100	nAdc
DC Current Gain <sup>(1)</sup>				—
( $V_{CE} = 10 \text{ Vdc}$ , $I_C = 2.0 \text{ mAdc}$ )	MSD601-RT1	$h_{FE1}$	210	340
	MSD601-ST1		290	460
( $V_{CE} = 2.0 \text{ Vdc}$ , $I_C = 100 \text{ mAdc}$ )		$h_{FE2}$	90	—
Collector-Emitter Saturation Voltage ( $I_C = 100 \text{ mAdc}$ , $I_B = 10 \text{ mAdc}$ )	$V_{CE(sat)}$	—	0.5	Vdc

1. Pulse Test: Pulse Width  $\leq 300 \mu\text{s}$ , D.C.  $< 2\%$ .

## DEVICE MARKING



The "X" represents a smaller alpha digit Date Code. The Date Code indicates the actual month in which the part was manufactured.