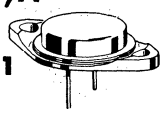
2N376A (GERMANIUM)

For Specifications, See 2N350A Data.

2N378 thru 2N380 (GERMANIUM)

2N459, A



CASE 11
(TO-3)

PNP germanium power transistors for general purpose power amplifier and switching applications.

MAXIMUM RATINGS

Rating	Symbol	2N378	2N379	2N380	2N459	2N459A	Unit
Collector-Emitter Voltage	V_{CEO}	20	40	30	60	60	Vdc
Collector-Emitter Voltage	V_{CEX}						Vdc
(V_{BE} = 1.5 V)		40	80	60	-	-	
(V_{BE} = 1.0 V)		-	-	-	105	105	
Collector-Emitter Voltage	V_{CES}	-	-	-	70	70	Vdc
Collector-Base Voltage	V_{CB}	-	-	-	-	105	Vdc
Emitter-Base Voltage	V_{EB}	-	-	-	10	25	Vdc
Collector Current	I_C	5.0					Adc
Operating Junction Temperature Range	T_J	-65 to +110					°C
Total Device Dissipation @ T_C = 25° C	P_D	106					Watts

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

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage		BV_{CEO}			Vdc
(I_C = 100 mAdc)	2N378		20	-	
	2N379		40	-	
	2N380		30	-	
	2N459, 2N459A		60	-	
Collector Cutoff Current		I_{CEX}			mAdc
(V_{CE} = 40 Vdc, $V_{BE(off)}$ = 1.5 Vdc)	2N378		-	10	
(V_{CE} = 60 Vdc, $V_{BE(off)}$ = 1.5 Vdc)	2N380		-	10	
(V_{CE} = 80 Vdc, $V_{BE(off)}$ = 1.5 Vdc)	2N379		-	10	
(V_{CE} = 105 Vdc, $V_{BE(off)}$ = 1.5 Vdc)	2N459		-	10	
(V_{CE} = 105 Vdc, $V_{BE(off)}$ = 1.0 Vdc)	2N459A		-	10	
Collector Cutoff Current		I_{CBO}			mAdc
(V_{CB} = 25 Vdc)			-	0.5	
(V_{CB} = 25 Vdc, T_C = 85° C)			-	7.5	
Emitter Cutoff Current		I_{EBO}			mAdc
(V_{BE} = 10 Vdc)	2N380		-	1.5	
	2N459		-	2.0	
(V_{BE} = 25 Vdc)	2N459A		-	2.0	

2N378, thru 2N380 2N459, 2N459 A (continued)

ELECTRICAL CHARACTERISTICS (continued)

Characteristic		Symbol	Min	Max	Unit
ON CHARACTERISTICS					
DC Current Gain		h_{FE}			-
(I_C = 2.0 Adc, V_{CE} = 2.0 Vdc)	2N378		40	80	
	2N379, 2N459		20	70	
	2N380		30	70	
	2N459A		40	70	
(I_C = 5.0 Adc, V_{CE} = 2.0 Vdc)	2N459A		20	-	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$			Vdc
(I_C = 2.0 Adc, I_B = 0.2 Adc)	2N378-2N380, 2N459		-	1.0	
	2N459A		-	0.3	
Base-Emitter Voltage		$V_{BE(on)}$			Vdc
(I_C = 2.0 Adc, V_{CE} = 2.0 Vdc)	2N378		-	1.6	
	2N379, 2N459, 2N459A		-	1.3	
	2N380		-	1.0	
DYNAMIC CHARACTERISTICS					
Common-Emitter Cutoff Frequency		$f_{\alpha e}$			kHz
(I_C = 1.0 Adc, V_{CE} = 2.0 Vdc)	2N378-2N380, 2N459		5.0	-	
(I_C = 2.0 Adc, V_{CE} = 2.0 Vdc)	2N459A		5.0	-	