INTERSIL

IT126-IT129
Dual Monolithic NPN Transistor

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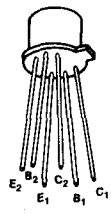
FEATURES

- **High Gain at Low Current — $h_{FE} \geq 230$ at 10 mA, $V_{CE} = 5V$**
- **Low Output Capacitance — $C_{obo} \leq 3$ pF**
- **Tight I_B Match — $I_{B1-2} < .25\ \mu A$ at 1 mA, $V_{CE} = 5V$**
- **Tight V_{BE} Tracking — $\Delta(V_{BE_1} - V_{BE_2}) \leq 3\ \mu V/°C$ −55°C to +125°C**
- **Dielectrically isolated matched pairs for differential amplifiers**

PIN CONFIGURATION

TO-71
TO-78



CHIP TOPOGRAPHY

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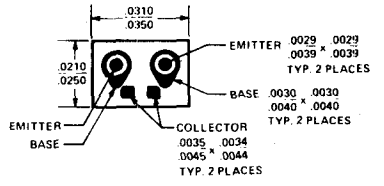

ORDERING INFORMATION

TO78	TO-71	WAFER	DICE
IT126	IT126-TO71	IT126/W	IT126/D
IT127	IT127-TO71	IT127/W	IT127/D
IT128	IT128-TO71	IT128/W	IT128/D
IT129	IT129-TO71	IT128/W	IT128/D

ABSOLUTE MAXIMUM RATINGS

@ 25°C (unless otherwise noted)

Maximum Temperatures

Storage Temperature	−65°C to +200°C
Operating Junction Temperature	+200°C

	TO71		TO78	
Maximum Power Dissipation	ONE SIDE	BOTH SIDES	ONE SIDE	BOTH SIDES
Total Dissipation at 25°C Case Temperature	0.3 Watt	0.5 Watt	0.4 Watt	0.75 Watt
Derating Factor	1.7 mW/°C	2.9 mW/°C	2.3 mW/°C	4.3 mW/°C

Maximum Voltage and Current for Each Transistor		IT126,7	IT128	IT129
V_{CBO}	Collector to Base Voltage	60V	55V	45V
V_{CEO}	Collector to Emitter Voltage	60V	55V	45V
V_{EBO}	Emitter to Base Voltage (Note 2)	7V	7V	7V
V_{CCO}	Collector to Collector Voltage	70V	70V	70V
I_C	Collector Current	100 mA	100 mA	100 mA

ELECTRICAL CHARACTERISTICS (@ 25°C unless otherwise noted)

PARAMETER		IT126		IT127		IT128		IT129		UNITS	CONDITIONS
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX		
h_{FE}	DC Current Gain	150		150		100		70			$I_C = 10\ \mu A$, $V_{CE} = 5V$
h_{FE}	DC Current Gain	200	800	200	800	150	800	100			$I_C = 1.0$ mA, $V_{CE} = 5V$
h_{FE}	DC Current Gain	230		230		170		115			$I_C = 10$ mA, $V_{CE} = 5V$
h_{FE}	DC Current Gain	100		100		75		50			$I_C = 50$ mA, $V_{CE} = 5V$
h_{FE}(-55°C)	DC Current Gain	75		75		60		40			$I_C = 1$ mA, $V_{CE} = 5V$
$V_{BE(on)}$	Emitter-Base On Voltage		.9		.9		.9		.9	V	$I_C = 10$ mA, $V_{CE} = 5V$
			1.0		1.0		1.0		1.0	V	$I_C = 50$ mA, $V_{CE} = 5V$
$V_{CE(sat)}$	Collector Saturation Voltage		.3		.3		.3		.3	V	$I_C = 10$ mA, $I_B = 1$ mA
			1.0		1.0		1.0		1.0	V	$I_C = 50$ mA, $I_B = 5$ mA
I_{CBO}	Collector Cutoff Current		0.1		0.1		0.1		0.1	nA	$I_E = 0$, $V_{CB} = 45V$, 30V
I_{CBO}(+150°C)	Collector Cutoff Current		0.1		0.1		0.1		0.1	μA	$I_E = 0$, $V_{CB} = 45V$, 30V
I_{EBO}	Emitter Cutoff Current		0.1		0.1		0.1		0.1	nA	$I_C = 0$, $V_{EB} = 5V$
C_{obo}	Output Capacitance		3		3		3		3	pF	$I_E = 0$, $V_{CB} = 20V$