SGS-THOMSON
MICROELECTRONICS

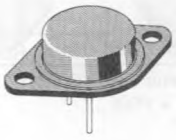
MJ4030/1/2
MJ4033/4/5

GENERAL PURPOSE

DESCRIPTION

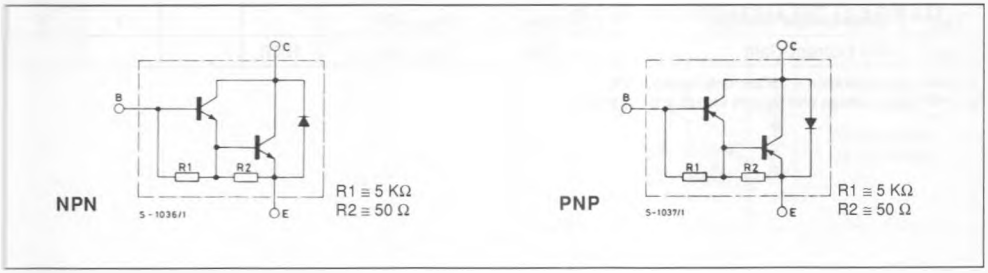
The MJ4030/31/32/33/34/35 are medium-power silicon NPN Darlington in Jedec TO-3 metal case, intended for use in general purpose and amplifier applications.

The complementary PNP types are the MJ4033/34/35 respectively.



TO-3

INTERNAL SCHEMATIC DIAGRAMS



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	PNP* NPN	Value			Unit
			MJ4030 MJ4033	MJ4031 MJ4034	MJ4032 MJ4035	
V_{CBO}	Collector-base Voltage (I_E = 0)		60	80	100	V
V_{CEO}	Collector-emitter Voltage (I_B = 0)		60	80	100	V
V_{EBO}	Emitter-base Voltage (I_C = 0)		5			V
I_C	Collector Current		16			A
I_B	Base Current		0.5			A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25°C$		150			W
T_{stg}	Storage Temperature		– 65 to 200			°C
T_j	Junction Temperature		200			°C

* For PNP types voltage and current values are negative.

THERMAL DATA

$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	Max	1.17	°C/W

ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEO}	Collector Cutoff Current (I_B = 0)	V_{CE} = 30V I_B = 0 **MJ4030/33**			3	mA
		V_{CE} = 40V I_B = 0 **MJ4031/34**			3	mA
		V_{CE} = 50V I_B = 0 **MJ4032/35**			3	mA
I_{EBO}	Emitter Cutoff Current (I_C = 0)	V_{EB} = 5V I_C = 0			5	mA
I_{CER}	Collector Cutoff Current (R_{BE} = 1KΩ)	for **MJ4030/33** V_{CB} = 60V			1	mA
		for **MJ4031/34** V_{CB} = 80V			1	mA
		for **MJ4032/35** V_{CB} = 100V			1	mA
		T_{case} = 150°C				
		for **MJ4030/33** V_{CB} = 60V			5	mA
		for **MJ4031/34** V_{CB} = 80V			5	mA
		for **MJ4032/35** V_{CB} = 100V			5	mA
$V_{(BR)CEO}$*	Collector-emitter Breakdown Voltage	I_C = 100mA I_B = 0				
		for **MJ4030/33**	60			V
		for **MJ4031/34**	80			V
		for **MJ4032/35**	100			V
$V_{CE(sat)}$*	Collector-emitter Saturation Voltage	I_C = 10A I_B = 40mA			2.5	V
		I_C = 16A I_B = 80mA			4	V
V_{BE}*	Base-emitter Voltage	I_C = 10A V_{CE} = 3V			3	V
h_{FE}*	DC Current Gain	I_C = 10A V_{CE} = 3V	1000			

* Pulsed : pulse duration = 300μs, duty cycles < 2%.
For PNP types voltage and current values are negative.