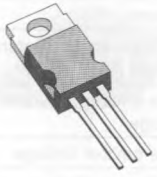
SGS-THOMSON
MICROELECTRONICS

2N6042
2N6045

GENERAL PURPOSE

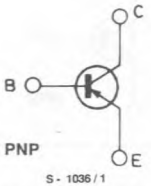
DESCRIPTION

The 2N6045 is a silicon epitaxial-base NPN transistor in monolithic Darlington configuration and is mounted in Jedec TO-220 plastic package. It is intended for use in power linear and switching applications. The complementary PNP type is the 2N6042.



TO-220

INTERNAL SCHEMATIC DIAGRAMS



PNP

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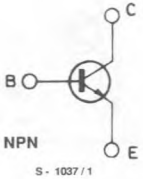

NPN

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ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage	100	V
V_{CEO}	Collector-emitter Voltage	100	V
I_C	Collector Current	12	A
I_{CM}	Collector Peak Current	15	A
I_B	Base Current	0.2	A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25$ °C	80	W
T_{stg}	Storage Temperature	– 65 to 150	°C
T_j	Junction Temperature	150	°C

For PNP type voltage and current values are negative.

THERMAL DATA

$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	Max	1.56	°C/W

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

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
I_{EBO}	Emitter Cutoff Current (I_C = 0)	V_{EB} = 6 V				2	mA
I_{CEO}	Collector Cutoff Current (I_B = 0)	V_{CE} = 100 V				20	µA
$V_{CEO(sus)}$*	Collector-emitter Sustaining Voltage	I_C = 100 mA		100			V
$V_{CE(sat)}$*	Collector-emitter Saturation Voltage	I_C = 3 A I_C = 8 A	I_B = 12 mA I_B = 80 mA			2 4	V V
$V_{BE(sat)}$*	Base-emitter Saturation Voltage	I_C = 8 A	I_B = 80 mA			4.5	V
$V_{BE(on)}$*	Base-emitter Voltage	I_C = 4 A	V_{CE} = 4 V			2.8	V
h_{FE}	DC Current Gain	I_C = 3 A I_C = 8 A	V_{CE} = 4 V V_{CE} = 4 V	1000 100		20000	
h_{fe}	Small Signal Current Gain	I_C = 3 A f = 1 MHz	V_{CE} = 4 V	4			
C_{CBO}	Collector-base Capacitance (I_E = 0)	V_{CB} = 10 V	f = 0.1 MHz			300	pF

* Pulsed : pulse duration = 300µs, duty cycle = 1.5 %.
For PNP type voltage and current values are negative.