SILICON POWER TRANSISTORS

High-speed, glass-passivated npn power transistors in a TO-220 envelope intended for fast switching applications such as high frequency and efficiency converters, switching regulators and motor control.

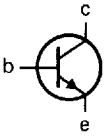
QUICK REFERENCE DATA

			BUV26	26A	
Collector-emitter voltage					
peak value; $V_{BE} = 0$	V_{CESM}	max.	180	200	V
open base	V_{CEO}	max.	90	100	V
Collector-emitter saturation voltage	V_{CEsat}	max.	1,5	1,0	V
Collector current					
saturation	I_{Csat}	max.	12	10	A
DC	I_C	max.	14		A
peak value	I_{CM}	max.	25		A
Total power dissipation					
up to $T_{mb} = 25\ ^oC$	P_{tot}	max.	65		W
Fall time; inductive load	t_f	typ.	40		ns

MECHANICAL DATA

Dimensions in mm

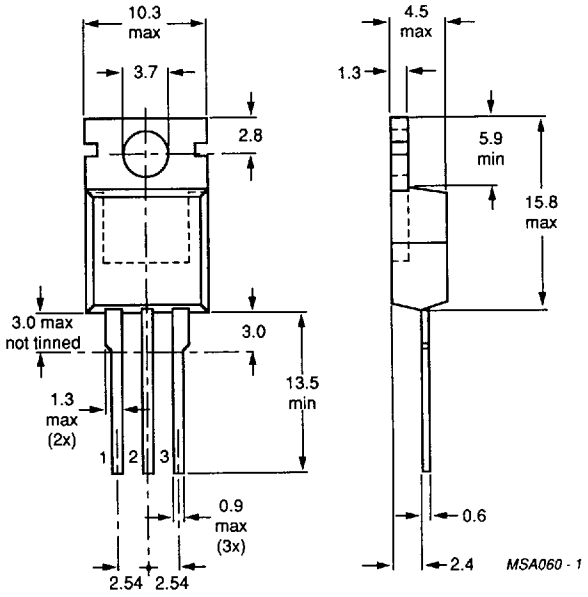
Fig. 1 TO-220AB.



Pinning:

1 = base
2 = collector
3 = emitter

Collector connected to mounting base.



RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134)

			BUV26	26A	
Collector-emitter voltage					
peak value; $V_{BE} = 0$	V_{CESM}	max.	180	200	V
open base	V_{CEO}	max.	90	100	V
Collector current					
saturation	I_{Csat}	max.	12	10	A
DC	I_C	max.	14		A
peak value	I_{CM}	max.	25		A
Base current					
DC	I_B	max.	4,0		A
peak value	I_{BM}	max.	6,0		A
Total power dissipation					
up to $T_{mb} = 25\ ^oC$	P_{tot}	max.	65		W
Storage temperature range	T_{stg}		−65 to + 150		^oC
Junction temperature	T_j	max.	150		^oC

THERMAL RESISTANCE

From junction to mounting base	$R_{th\ j\text{-}mb}$	=	1,92	K/W

CHARACTERISTICS

T_j = 25 °C unless otherwise specified

			BUV26	26A	
Collector cut-off currents*					
$V_{CE} = V_{CESmax}$; $V_{BE} = -1,5$ V; T_j = 125 °C	I_{CEX}	max.	1,0		mA
$V_{CE} = V_{CESmax}$; $R_{BE} = 50\ \Omega$; T_j = 125 °C	I_{CER}	max.	3,0		mA
Emitter cut-off current					
V_{EB} = 5 V; I_C = 0	I_{EBO}	max.	1,0		mA
Collector-emitter sustaining voltage (Figs 2 and 3)					
I_B = 0; I_C = 0,2 A; L = 25 mH	$V_{CEOsust}$	min.	90	100	V
Saturation voltages					
$I_C = I_{Csat}$; $I_B = I_{Csat}/10$	V_{CEsat}	max.	1,5	1,0	V
	V_{BEsat}	max.	2,0	1,5	V
$I_C = I_{Csat}/2$; $I_B = I_{Csat}/20$	V_{CEsat}	max.	0,6	0,5	V
	V_{BEsat}	max.	1,2	1,2	V
Switching times resistive load (Figs 4 and 5)					
$I_{C\,on} = I_{Csat}$; $I_{B\,on} = I_{Csat}/10$; $I_{B\,off} = 2I_{B\,on}$; V_{CE} = 50 V					
Turn-on time	t_{on}	typ.	0,4		μs
Turn-off;					
storage time	t_s	typ.	0,45		μs
fall time	t_f	typ.	0,12		μs
Turn-on time	t_{on}	max.	0,6		μs
Turn-off;					
storage time	t_s	max.	1,0		μs
fall time	t_f	max.	0,25		μs
Switching times inductive load (Figs 6 and 7)					
$I_{C\,on} = I_{Csat}$; $I_{B\,on} = I_{Csat}/10$					
Turn-off					
storage time	t_s	typ.	0.5		μs
fall time	t_f	typ.	40		μs
Turn-off; T_j = 125 °C					
storage time	t_s	max.	2.0		μs
fall time	t_f	max.	150		ns

* Measured with a half-sinewave voltage (curve tracer).

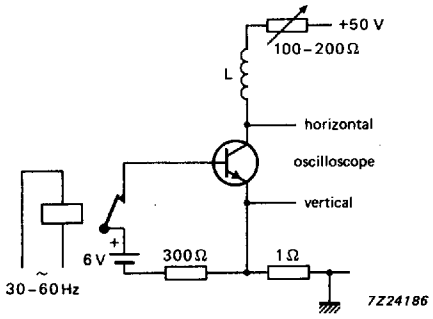


Fig. 2 Test circuit for V_{CEsust}.

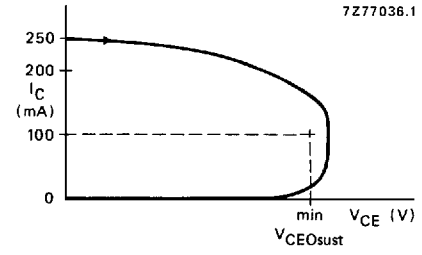


Fig. 3 Oscilloscope display for sustaining voltage.

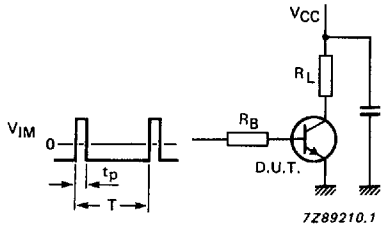


Fig. 4 Test circuit resistive load.

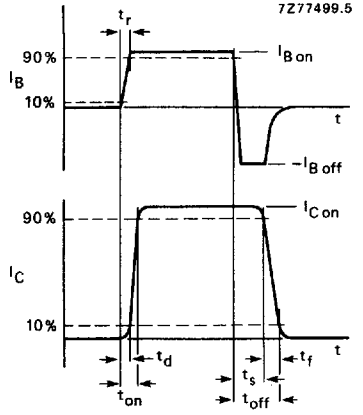
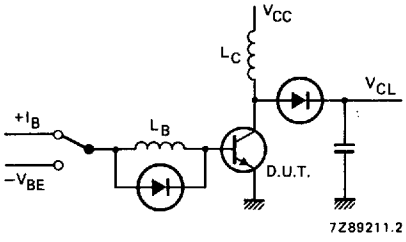


Fig. 5 Switching times waveforms with resistive load; $t_r \leqslant 30$ ns.



L_B = 0,5 μH
L_C = 200 μH
V_{CC} = 50 V
$-V_{BE}$ = 5 V
V_{CL} = 50 V

Fig. 6 Test circuit inductive load.

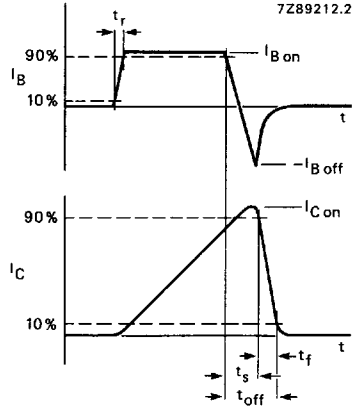


Fig. 7 Switching times waveforms with inductive load.