

TO-252 Plastic-Encapsulate Transistors

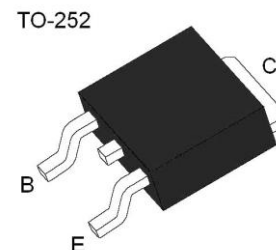
BU406D NPN

Applications

- Designed for use in horizontal deflection output stages of TV's and CRT's

Features:

- High voltage: $BV_{CEO}=400V(\text{min.})$
- High collector-current : $I_C=7A$
- Low saturation voltage: : $V_{CE(\text{sat})}=1.0V(\text{Max.})@I_C=5A$



Absolute Maximum Ratings (Ta=25°C , unless otherwise noted)

Parameter		Symbol	Value	Unit
Collector-base voltage		BV_{CBO}	400	V
Collector-emitter voltage		BV_{CEO}	200	V
Emitter-base voltage		BV_{EBO}	6	V
Collector current (DC)		I_C	7	A
Collector current (Pulse)		I_{CP}	10	A
Base current		I_B	4	A
Collector power dissipation	Ta=25°C	P_C	1.2	W
	Tc=25°C		60	
Junction temperature		T_J	150	°C
Storage temperature		T_{stg}	-55~+150	°C

Thermal characteristics

Parameter	Symbol	Value	Unit
Thermal resistance,junctionto case	$R_{\theta JC}$	2.08	°C / W
Thermal resistance,junctionto ambient	$R_{\theta JA}$	70	°C / W


Electrical Characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BV_{CBO}	$I_C = 100\mu A, I_E = 0$	400			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = 1mA, I_B = 0$	200			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = 100\mu A, I_C = 0$	6			V
Collector cut-off current	I_{CBO}	$V_{CB} = 400V, I_E = 0$			1.0	mA
Collector cut-off current	I_{CES}	$V_{CE} = 400V, V_{BE} = 0$			5.0	mA
		$V_{CE} = 250V, V_{BE} = 0$			0.1	mA
Emitter cut-off current	I_{EBO}	$V_{EB} = 6V, I_C = 0$			1.0	mA
DC current gain	h_{FE}	$V_{CE} = 5V, I_C = 2A$	60			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 5A, I_B = 0.5A$			1.0	V
Base -emitter saturation voltage	$V_{BE(sat)}$	$I_C = 5A, I_B = 0.5A$			1.2	V
Transition frequency	f_T	$V_{CE} = 10V, I_B = 0.5A$	10			MHz
Output capacitance	C_{ob}	$V_{CB} = 10V, f = 1MHz$		80		pF
Turn off time	t_{OFF}	$I_C = 5A, I_B = 0.5A$			0.75	μs



Typical Characteristics

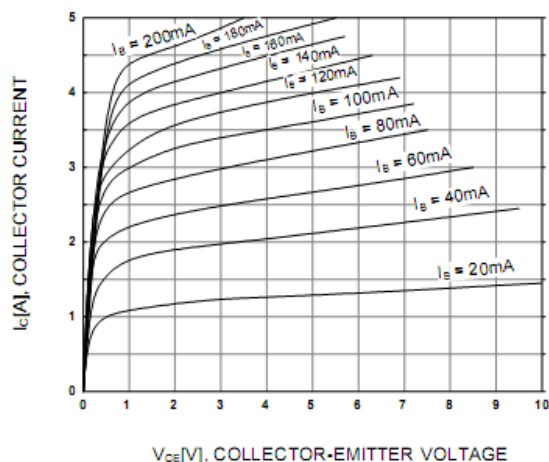


Figure 1. Static Characteristic

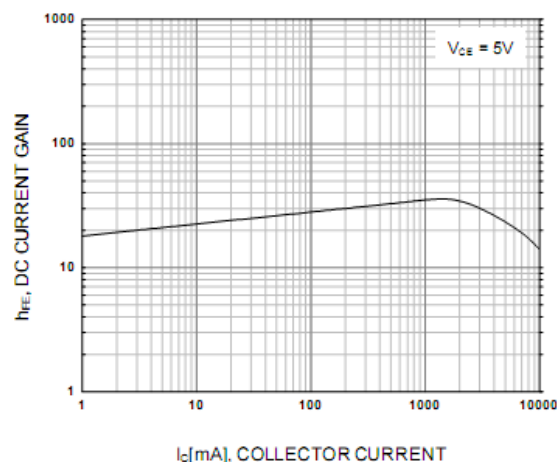


Figure 2. DC current Gain

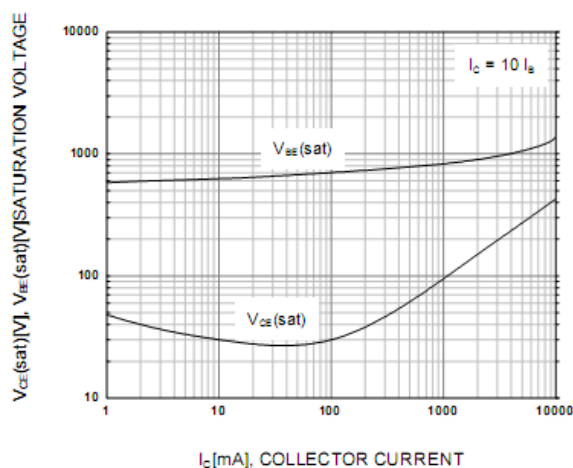


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

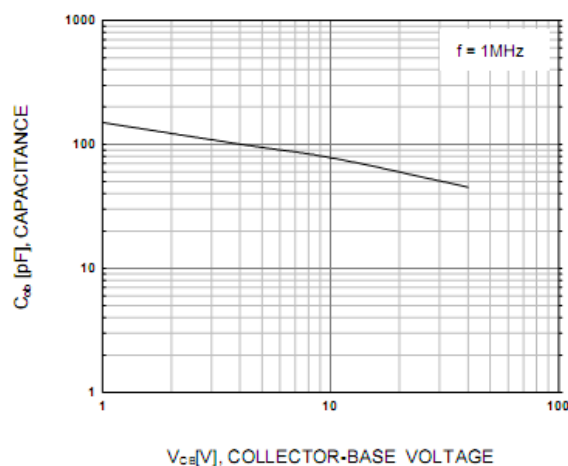


Figure 4. Collector Output Capacitance

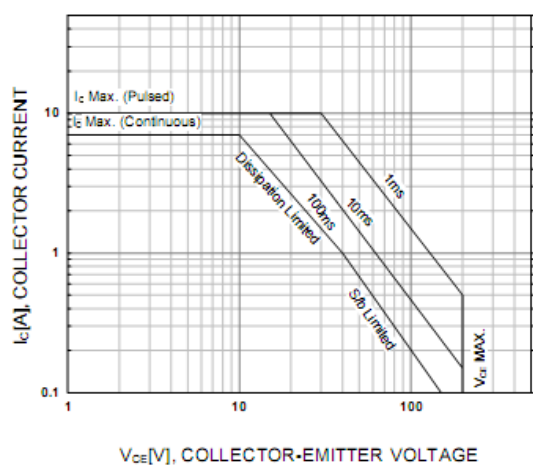


Figure 5. Safe Operating Area

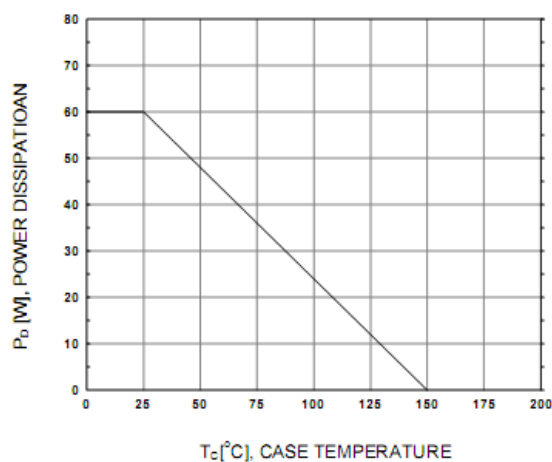


Figure 6. Power Derating



Package Dimensions

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.50	0.087	0.094
A1	1.00	1.40	0.039	0.055
A2	0.00	0.15	0.000	0.006
b	0.50	0.70	0.020	0.028
b1	0.70	0.90	0.028	0.035
c	0.40	0.60	0.016	0.024
c1	0.40	0.60	0.016	0.024
D	6.20	6.70	0.244	0.264
D1	5.10	5.50	0.201	0.217
E	5.50	6.00	0.217	0.236
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	9.70	10.40	0.382	0.409
L1	1.40	1.70	0.055	0.063
L2	0.60	1.20	0.024	0.047