

### HIGH CURRENT APPLICATION.

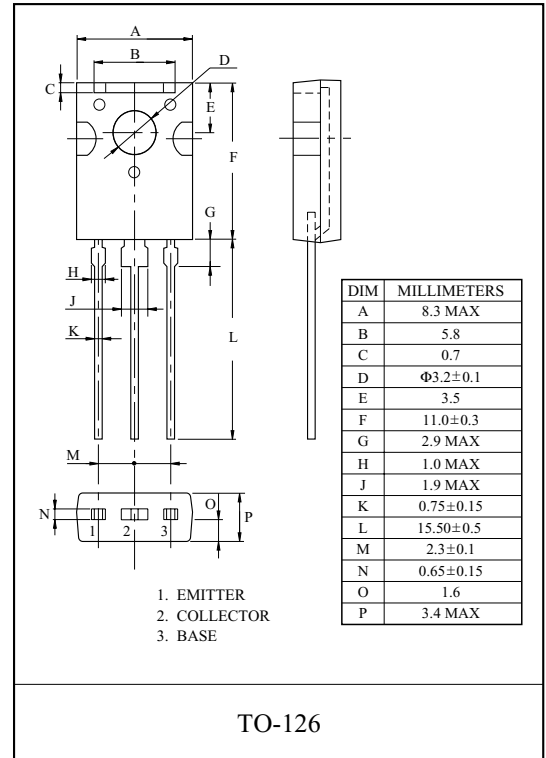
- Switching Applications
- Solenoid Drive Applications
- Temperature Compensated for Audio Amplifier Output Stage

### FEATURES

- High DC current gain :  $h_{FE} = 500(\text{min})$  ( $I_C=400\text{mA}$ )
- Low Collector emitter saturation voltage :  $V_{CE(\text{sat})}=0.5\text{V}(\text{max})$  ( $I_C=300\text{mA}$ )

### MAXIMUM RATING (Ta=25 °C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	40	V
Collector-Emitter Voltage	$V_{CEO}$	40	V
Emitter-Base Voltage	$V_{EBO}$	7	V
Collector Current	$I_C$	2	A
Collector Power Dissipation	$P_C$	1.5	W
Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_{\text{stg}}$	-55 ~ 150	°C

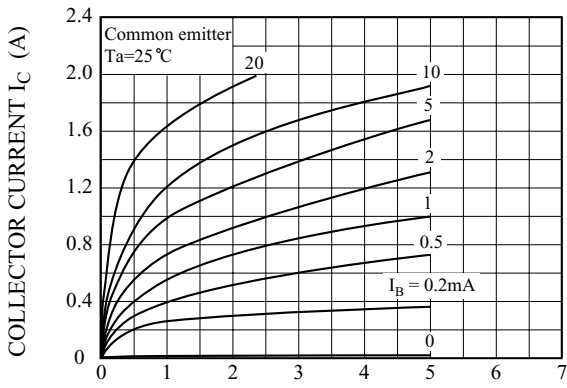


### ELECTRICAL CHARACTERISTICS (Ta=25 °C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT				
Collector Cut-off Current	$I_{CBO}$	$V_{CB}=40\text{V}, I_E=0$	-	-	10	$\mu\text{A}$				
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=7\text{V}, I_C=0$	-	-	1	$\mu\text{A}$				
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=10\text{mA}, I_B=0$	40	-	-	V				
DC Current Gain	$h_{FE}$	$V_{CE}=1\text{V}, I_C=400\text{mA}$	500	-	-					
Collector-Emitter Saturation Voltage	$V_{CE(\text{sat})}$	$I_C=300\text{mA}, I_B=1\text{mA}$	-	0.3	0.5	V				
Base-Emitter Saturation Voltage	$V_{BE(\text{sat})}$	$I_C=300\text{mA}, I_B=1\text{mA}$	-	-	1.1	V				
Transition Frequency	$f_T$	$V_{CE}=2\text{V}, I_C=100\text{mA}$	-	220	-	MHz				
Collector Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$	-	20	-	pF				
Switching Time	Turn On Time	$t_{on}$					-	1.0	-	$\mu\text{s}$
	Storage Time	$t_{\text{stg}}$					-	3.0	-	
	Fall Time	$t_f$					-	1.2	-	

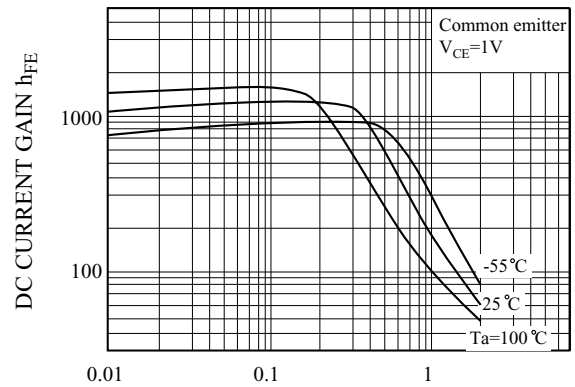
$I_{B1} = -I_{B2} = -1\text{mA}, \text{DUTY CYCLE} \leq 1\%, V_{CC} = 30\text{V}$

$I_C - V_{CE}$



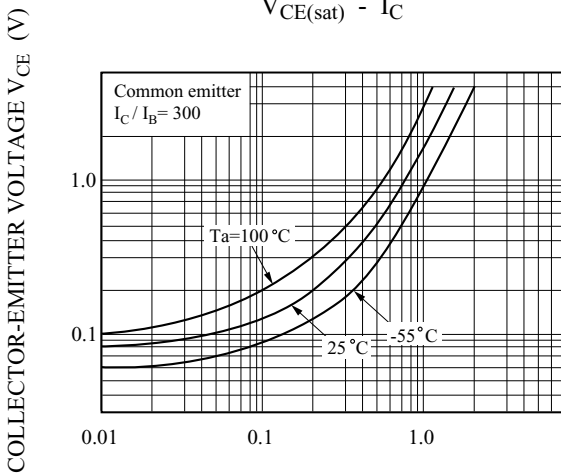
COLLECTOR-EMITTER VOLTAGE  $V_{CE}$  (V)

$h_{FE} - I_C$



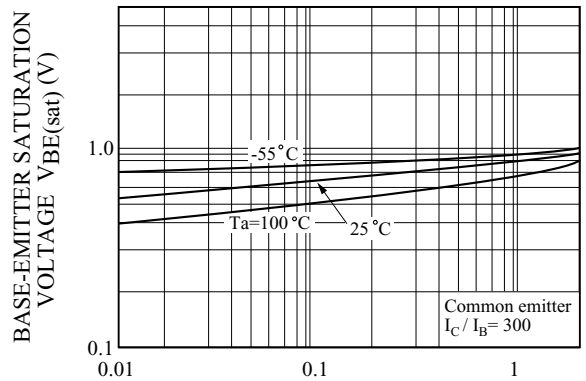
COLLECTOR CURRENT  $I_C$  (A)

$V_{CE(sat)} - I_C$



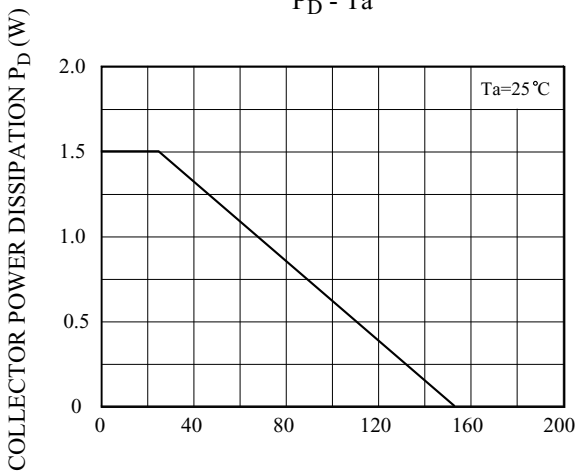
COLLECTOR CURRENT  $I_C$  (A)

$V_{BE(sat)} - I_C$



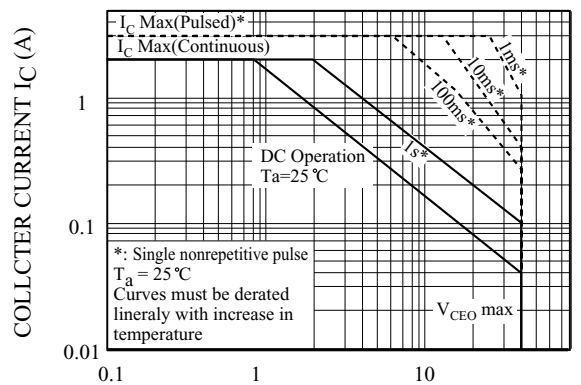
COLLECTOR CURRENT  $I_C$  (A)

$P_D - T_a$



AMBIENT TEMPERATURE  $T_a$  (°C)

Safe Operation Area



COLLECTOR-EMITTER VOLTAGE  $V_{CE}$  (V)