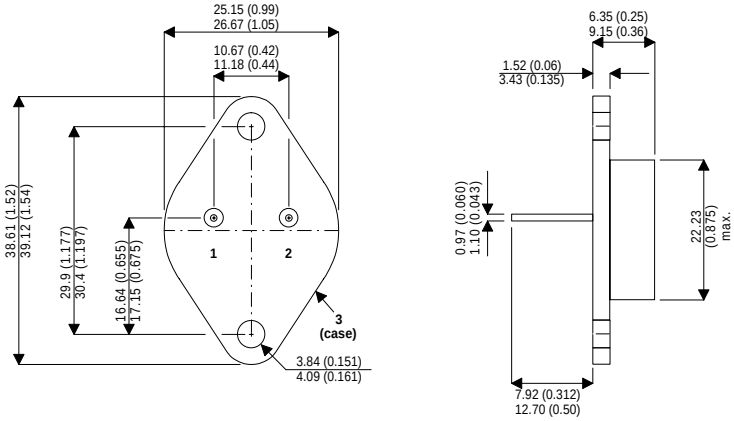
2N6686

NPN BIPOLAR MULTI-EPITAXIAL POWER TRANSISTOR



FEATURES

- **LOW $V_{CE(SAT)}$**
- **FAST SWITCHING**

APPLICATIONS

- **SUITABLE FOR POWER SUPPLIES AND OTHER HIGH VOLTAGE SWITCHING APPLICATIONS.**

TO3 (T0-204AA)

Pin 1 – Base Pin 2 – Emitter Case – Collector

ABSOLUTE MAXIMUM RATINGS (When mounted on a suitable header)

V_{CEX}	Collector – Emitter Voltage	(V_{BE} = –1.5V)	210V
V_{CEO}	Collector – Emitter Voltage	(I_B = 0)	160V
V_{EBO}	Emitter – Base Voltage		8V
I_C	Collector Current		25A
I_{CM}	Collector Current (Peak)		50A
I_B	Base Current		8A
T_{stg}	Storage Temperature		–65 to 200°C
T_j	Maximum Operating Junction Temperature		200°C

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SEME LAB

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ELECTRICAL CHARACTERISTICS (When mounted on a suitable header)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
$V_{CEO(BR)}$*	Collector – Emitter Breakdown Voltage	I_C = 200mA	I_B = 0	160			V
I_{CEV}	Collector - Emitter Current	V_{CE} = 260V	V_{BE} = –1.5V			50	µA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{BE} = –8V	I_C = 0			100	
$V_{CE(sat)}$*	Collector - Emitter Saturation Voltage	I_C = 25A	I_B = 2.5A			1.5	V
$V_{BE(sat)}$*	Base - Emitter Saturation Voltage	I_C = 25A	I_B = 2.5A			1.8	V
h_{FE}	DC Current Gain	I_C = 1A	V_{CE} = 2V	30			—
		I_C = 10A	V_{CE} = 2V	25		100	
		I_C = 25A	V_{CE} = 2V	15			
h_{fe}	Small Signal Current Gain	I_C = 1A f = 5MHz	V_{CE} = 10V	4		20	—
$I_{S/B}$	Second Breakdown Collector Current	I_C = 11.1A	V_{CE} = 18V	1			s
C_{ob}	Output Capacitance	V_{CE} = 10V	f = 0.1MHz	300		650	pF
f_T	Transition Frequency	I_C = 1A	V_{CE} = 10V	20		100	MHz

*Pulse Test : t_p = 300µs , $\delta \leq 2\%$.

SWITCHING CHARACTERISTICS (When mounted on a suitable header)

Parameter		Test Conditions	Min.	Typ.	Max.	Unit
SWITCHING TIMES ON RESISTIVE LOAD						
t_d	Delay time	I_C = 25A V_{BE} = –4V I_{B1} = $-I_{B2}$ = 2.5A			0.1	µS
t_r	Rise time				0.6	
t_s	Storage time				1.5	
t_f	Fall time				0.25	
TURN OFF SWITCHING CHARACTERISTICS – INDUCTIVE LOAD						
t_c	V_{CE}/ I_C Crossover Time	I_C = 25A V_{CC} = 80V V_{BE} = –4V V_{clamp} = 210V $R_c \leq 4\Omega$ L = 25µH I_{B1} = $-I_{B2}$ = 3A			0.5	µS

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