Silicon NPN Power Transistors 2N3771 2N3772

DESCRIPTION

·With TO-3 package
·High power and high current capability

APPLICATIONS

·For linear amplifiers, series pass regulators and inductive switching applications

PINNING

PIN	DESCRIPTION
1	Base
2	Emitter
3	Collector

Fig.1 simplified outline (TO-3) and symbol

Absolute maximum ratings(Ta=□)

SYMBOL	PARAMETER		CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	2N3771	Open emitter	50	V
		2N3772		100	
V_{CEO}	Collector-emitter voltage	2N3771	Open base	40	V
		2N3772		60	
V_{EBO}	Emitter-base voltage	2N3771	Open collector	5	V
		2N3772		7	
I_C	Collector current	2N3771		30	A
		2N3772		20	
I_{CM}	Collector current-peak			30	A
I_B	Base current	2N3771		7.5	A
		2N3772		5.0	
I_{BM}	Base current-peak			15	A
P_D	Total Power Dissipation		T_C=25□	150	W
T_j	Junction temperature			200	□
T_{stg}	Storage temperature			-65~200	□

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j\text{-}c}$	Thermal resistance junction to case	1.17	□/W

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CHARACTERISTICS

Tj=25□ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-emitter sustaining voltage	2N3771	I_C=0.2A ;I_B=0	40			V
		2N3772		60			
$V_{CEsat-1}$	Collector-emitter saturation voltge	2N3771	I_C=15A ;I_B=1.5A			2.0	V
		2N3772	I_C=10A ;I_B=1.0A			1.4	
$V_{CEsat-2}$	Collector-emitter saturation voltage	2N3771	I_C=30A; I_B=6A			4.0	V
		2N3772	I_C=20A; I_B=4A				
V_{BE}	Base-emitter on voltage	2N3771	I_C=15A ; V_{CE}=4V			2.7	V
		2N3772	I_C=10A ; V_{CE}=4V			2.2	
I_{CEO}	Collector cut-off current	2N3771	V_{CE}=30V; I_B=0			10	mA
		2N3772	V_{CE}=50V; I_B=0				
I_{CEV}	Collector cut-off current	2N3771	V_{CE}=50V; $V_{BE(off)}$=1.5V V_{CE}=30V T_C=150□			2.0 10.0	mA
		2N3772	V_{CE}=100V; $V_{BE(off)}$=1.5V V_{CE}=45V T_C=150□			5.0 10.0	
I_{CBO}	Emitter cut-off current	2N3771	V_{CB}=50V; I_E=0			2.0	mA
		2N3772	V_{CB}=100V; I_E=0			5.0	
I_{EBO}	Emitter cut-off current	2N3771	V_{EB}=5V; I_C=0			5.0	mA
		2N3772	V_{EB}=7V; I_C=0				
h_{FE-1}	DC current gain	2N3771	I_C=15A ; V_{CE}=4V	15		60	
		2N3772	I_C=10A ; V_{CE}=4V				
h_{FE-2}	DC current gain	2N3771	I_C=30A ; V_{CE}=4V	5			
		2N3772	I_C=20A ; V_{CE}=4V				
f_T	Transition frequency		I_C=1.0A ; V_{CE}=4V;f=50kHz	0.2			MHz
$I_{s/b}$	Second breakdown energy with base forward biased	2N3771	V_{CE}=40Vdc,t=1.0s, Nonrepetitive	3.75			A
		2N3772	V_{CE}=60Vdc,t=1.0s, Nonrepetitive	2.5			

PACKAGE OUTLINE

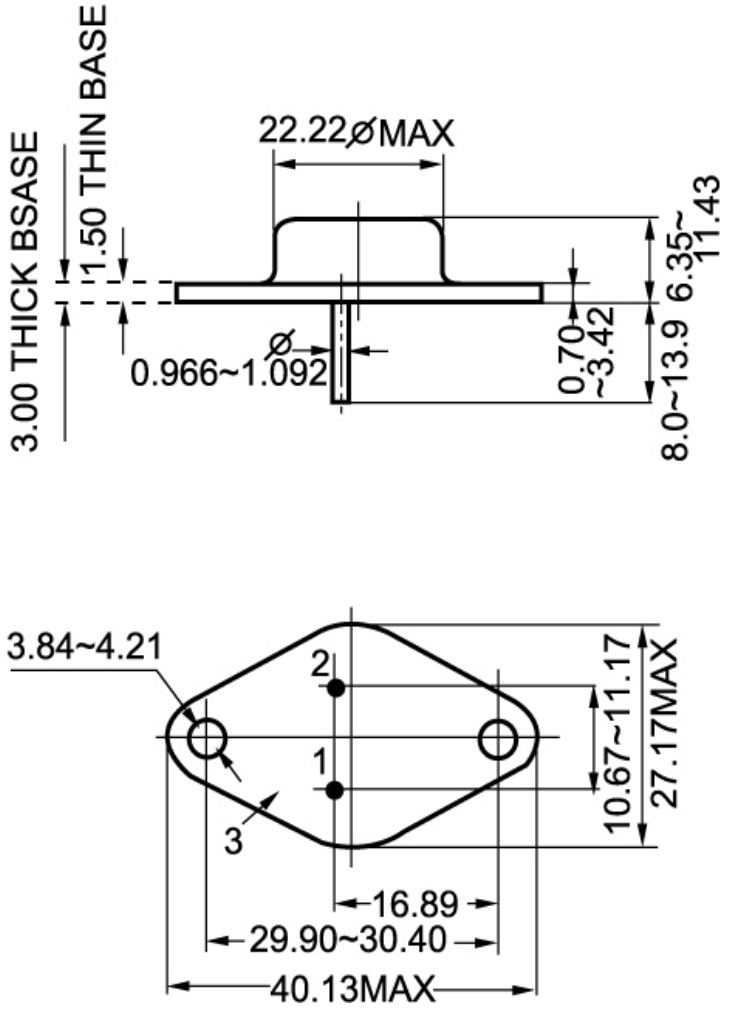

Fig.2 outline dimensions (unindicated tolerance:±0.10mm)

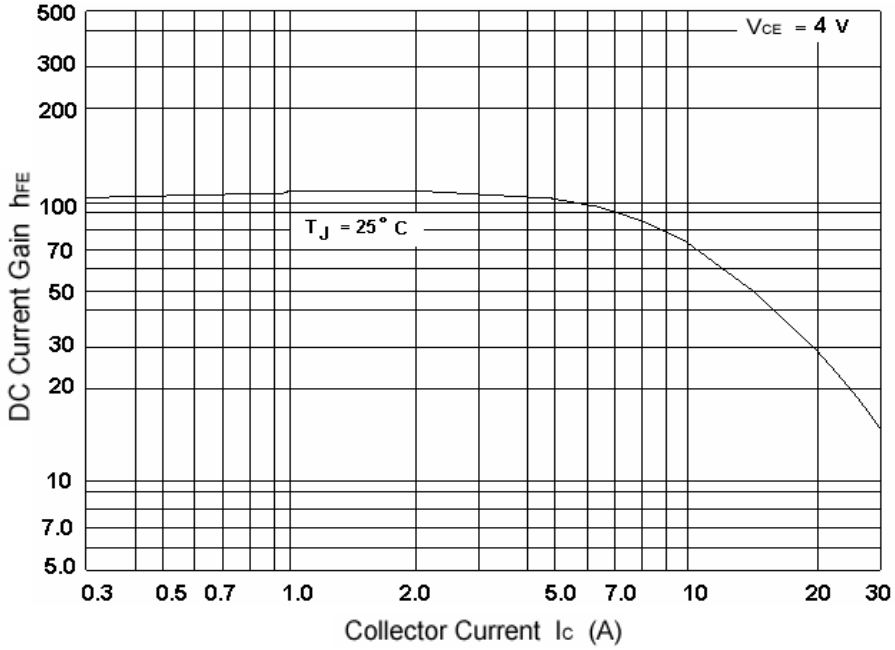

Fig.3 DC current Gain

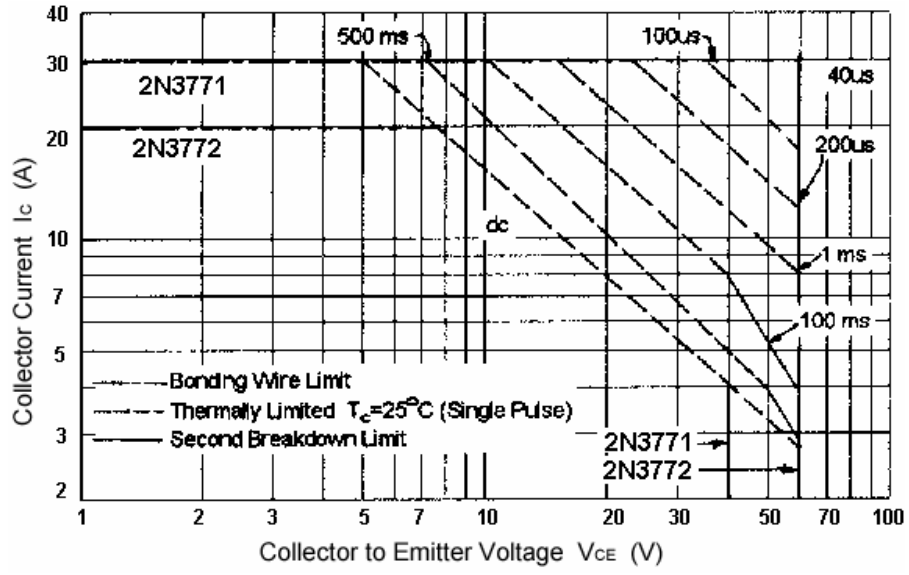

Fig.4 Safe Operating Area