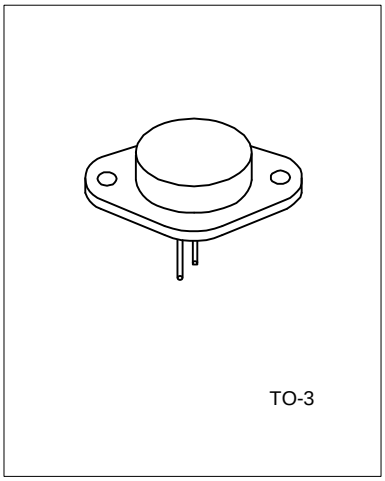
COMPLEMENTARY SILICON TRANSISTORS



The 2N3773/2N6099 are power-base power transistors designed for high power audio, disk head positions and other linear applications. These device can be used in power switching circuits such as relay or solened drivers, DC to DC converters or inverts.

FEATURES

*High safe operating area(100 tested)
150W and 100V
*Complement Characterized for linear operation
*High DC Current Gain and low saturation voltage
Hfe=15(8A 4V)
Vce(sat)=1.4V(Ic=8A,Ib=0.8A)
*For Low Distortion Complementary Designs

ABSOLUTE MAXIMUM RATINGS (Ta=25°C ,unless otherwise specified)

PARAMETERS	SYMBOL	VALUE	UNITS
Collector-base voltage	V_{CBO}	160	V
Collector-emitter voltage	V_{CEO}	140	V
Emitter-base voltage	V_{EBO}	7	V
Collector-emitter voltage	V_{CEX}	160	V
Total Power dissipation	Pc		
Tc=25°C		150	W
Dertate above 25°C		0.855	W/°C
Collector current	Ic		
continuous		16	A
Peak		30	A
Base current	I_B		
continuous		4	A
Peak		15	A
Thermal resistance Junction to Case	$R_{\theta JC}$	1.17	°C/W
Storage Temperature	T_{STG}	-65 ~ +200	°C

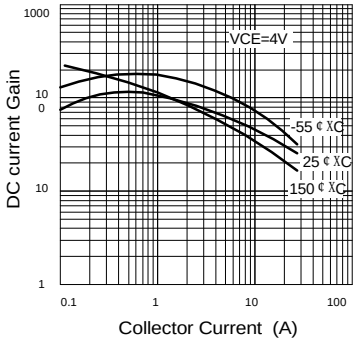
ELECTRICAL CHARACTERISTICS(Ta=25°C,unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Collector-Base Breakdown Voltage	BV_{CBO}	Ic=0.2A,Ib=0	140			V
Collector-Emitter Sustaining Voltage	BV_{CEX}	Ic=0.1A,Vbe(OFF)=1.5V Rbe=100Ω	160			V
Collector-Emitter Sustaining Voltage	BV_{CER}	Ic=0.1A Rbe=100Ω	150			V
Collector Cut-off Current	I_{CBO}	V_{CB}=140V,I_E=0			2	mA
Emitter Cut-off Current	I_{EBO}	V_{BE}=7V,Ic=0			5	mA
Collector Cut-off Current	I_{CEX}	V_{CE}=140V,$V_{BE(off)}$=1.5V V_{CE}=140V,$V_{BE(off)}$=1.5V ,Tc=150°C		2 10		mA mA
OFF CHARACTERISTICS						
DC current gain(note)	h_{FE1} h_{FE2}	V_{CE}=4V,Ic=8A V_{CE}=4V,Ic=16A	15 5		60	
Collector-emitter saturation voltage	V_{CE}(sat)	Ic=8A,I_B=800mA Ic=16A,I_B=3.2A			1.4 4	V
Base-emitter saturation voltage	V_{BE}(on)	Ic=8A, V_{CE}=4V			2.2	V
DYNAMIC CHARACTERISTICS						
Small Signal Current Gain	h_{FE}	Ic=1A,VCE=4V,f=1kHz	40			
Magnitade of commom-Emitter small signal,short circuit forward current transfer ratio	$\|h_{FE}\|$	Ic=1A,f=50kHz	4			
Second breakdown collector with base forward biased	Is/b	t=1s(non-repetive),V_{CE}=100V	1.5			A

TYPICAL PARAMETERS PERFORAMCES

2N3773

Figure 1 DC current gain



2N6609

Figure 2 DC current gain

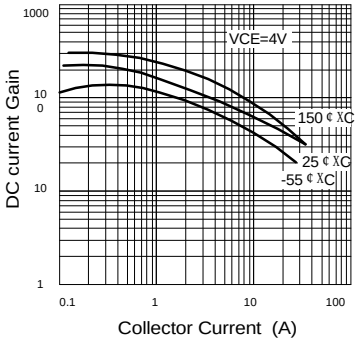


Figure 3 Collecor saturation region

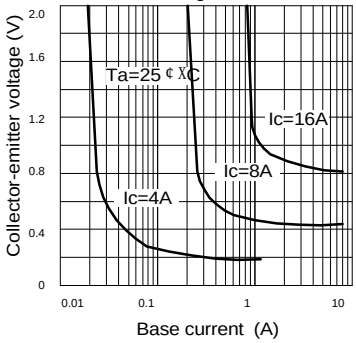


Figure 4 Collecor saturation region

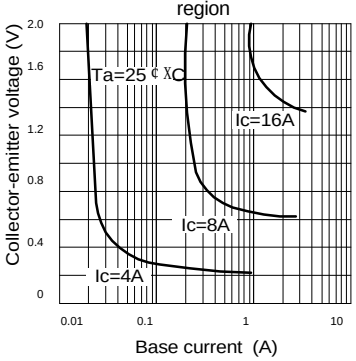


Figure 5 "ON" Voltage

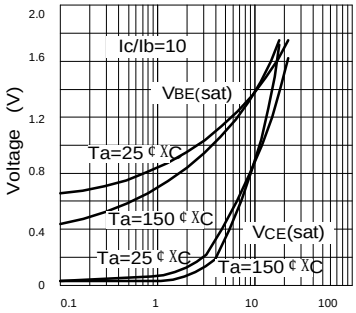


Figure 6 "ON" Voltage

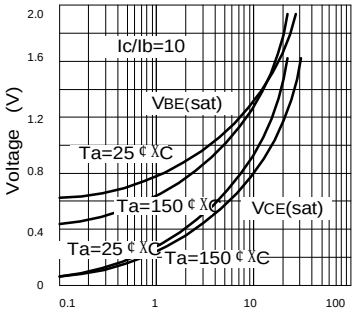


Figure 7 Turn-on Switching times

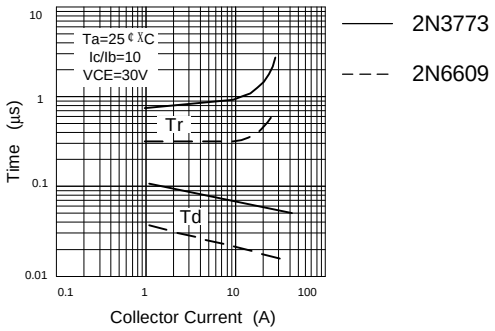


Figure 8 Turn-off Switching times

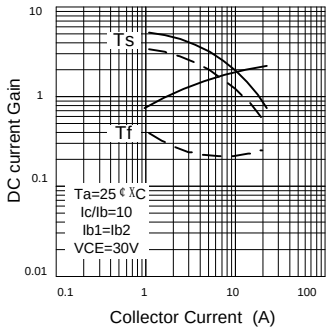


Figure 9 Current gain - bandwidth product

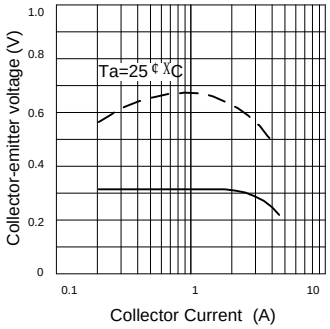


Figure 10 Capacitances

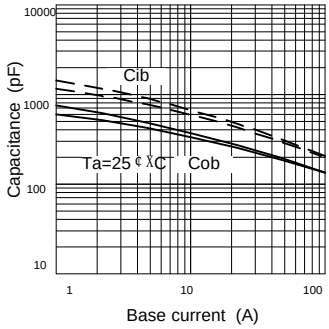


Figure 11 Thermal response