

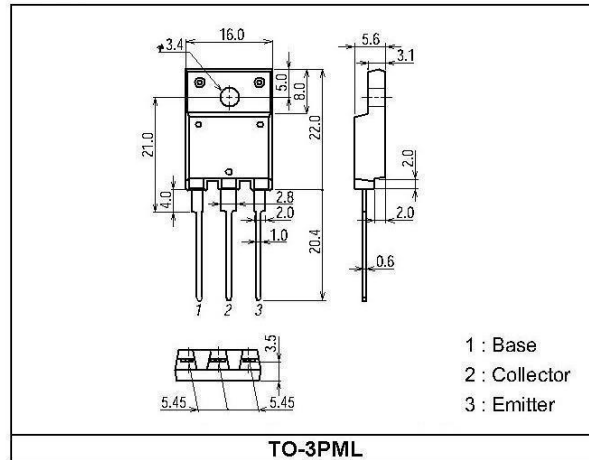
High-Voltage Switching Applications NPN Triple Diffused Planar Silicon Transistor

Features

- High speed (Adoption of MBIT process).
- High breakdown voltage ($V_{CBO}=1500V$).
- High reliability (Adoption of HVP process).
- On-chip damper diode.

Applications

- TV



Specifications

Absolute Maximum Ratings at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		1500	V
Collector-to-Emitter Voltage	V_{CEO}		700	V
Emitter-to-Base Voltage	V_{EBO}		5	V
Collector Current	I_C		5	A
Collector Current (Pulse)	I_{CP}		10	A
Base Current	I_B		1	A
Collector Dissipation	P_C		3.0	W
		$T_c=25^\circ C$	50	W
Junction Temperature	T_J		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$

Electrical Characteristics at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=700V, I_E=0$			0.1	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5V, I_C=0$			600	mA
DC Current Gain	h_{FE1}	$V_{CE}=5V, I_C=1A$	100		230	
	h_{FE2}	$V_{CE}=5V, I_C=5A$	50		150	

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Sustain Voltage	$V_{CEO(sus)}$	$I_C=100mA, I_B=0$	700			V
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=5A, I_B=0.5A$			1.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=5A, I_B=0.5A$			2.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	1500			V
Diode Forward Voltage	V_F	$I_{EC}=5A$			2.0	V
Fall Time	t_f	$I_C=5A, I_{B1}=0.5A, I_{B2}=-2.5A, V_{CC}=200V, R_L=40\Omega$			0.8	μs
Storage Time	t_{stg}	$I_C=5A, I_{B1}=0.5A, I_{B2}=-2.5A, V_{CC}=200V, R_L=40\Omega$			3	μs

Switching Time Test Circuit

