

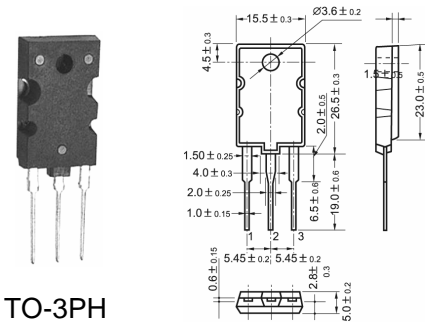


S2005A

SILICON DIFFUSED POWER TRANSISTOR

GENERAL DESCRIPTION

Highvoltage,high-speed switching npn transistors in a plastic envelope with integrated efficiency diode , primarily for use in horizontal deflection circuites of colour television receivers



QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V_{CESM}	Collector-emitter voltage peak value	$V_{BE} = 0V$		1500	V
V_{CEO}	Collector-emitter voltage (open base)			600	V
I_C	Collector current (DC)			8	A
I_{CM}	Collector current peak value			15	A
P_{tot}	Total power dissipation	$T_{mb} \leq 25^\circ C$		125	W
V_{CEsat}	Collector-emitter saturation voltage	$I_C = 4.5A; I_B = 2.0A$		1.5	V
I_{csat}	Collector saturation current	$f = 16KHz$			A
V_F	Diode forward voltage	$I_F = 4.0A$		2.0	V
t_f	Fall time	$I_C = 4.5A, I_{B1} = -I_{B2} = 1.2A, V_{CC} = 140V$		1.0	μs

LIMITING VALUES

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V_{CESM}	Collector-emitter voltage peak value	$V_{BE} = 0V$		1500	V
V_{CEO}	Collector-emitter voltage (open base)			600	V
V_{EBO}	Emitter-base voltage(open collector)			5	V
I_C	Collector current (DC)			8	A
I_B	Base current (DC)			4	A
I_{BM}	Base current peak value			6	A
P_{tot}	Total power dissipation	$T_{mb} \leq 25^\circ C$		125	W
T_{sto}	Storage temperature		-55	150	$^\circ C$
T_j	Junction temperature			150	$^\circ C$

ELECTRICAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
I_{CE}	Collector-emitter cut-off current	$V_{BE} = 0V; V_{CE} = V_{CESMmax}$		1.0	mA
I_{CES}		$V_{BE} = 0V; V_{CE} = V_{CESMmax}$		2.0	mA
$V_{CEO sust}$	Collector-emitter sustaining voltage	$T_j = 125^\circ C$ $I_B = 0A; I_C = 100mA$ $L = 25mH$			V
V_{CEsat}	Collector-emitter saturation voltages	$I_C = 4.5A; I_B = 2.0A$		1.5	V
V_{BEsat}	Base-emitter saturation voltage	$I_C = 4.5A; I_B = 2.0A$		2.5	V
h_{FE}	DC current gain	$I_C = 1.0A; V_{CE} = 5V$	8	30	
V_F	Diode forward voltage	$I_F = 4.0A$		2.0	V
f_T	Transition frequency at $f = 1MHz$	$I_C = 0.1A; V_{CE} = 10V$	3		MHz
C_c	Collector capacitance at $f = 1MHz$	$V_{CB} = 10V$			pF
t_s	Switching times(16KHz line deflecton circuit)	$I_C = 4.5A, I_{B1} = -I_{B2} = 1.2A, V_{CC} = 140V$		7.0	μs
t_f	Turn-off storage time Turn-off fall time	$I_C = 4.5A, I_{B1} = -I_{B2} = 1.2A, V_{CC} = 140V$		1.0	μs