



## 2SD1710

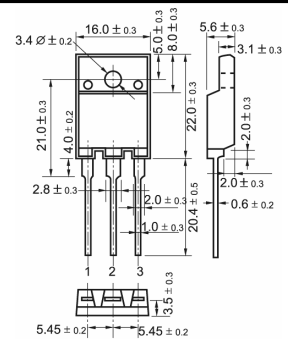
## Silicon Diffused Power Transistor

### GENERAL DESCRIPTION

High voltage, high-speed switching npn transistors in a plastic package, primarily for use in horizontal deflection circuits of colour television receivers



TO-3PML



### QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	TYP	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)		-	5	A
$I_{CM}$	Collector current peak value		-	10	A
$P_{tot}$	Total power dissipation	$T_{mb} \leq 25^\circ C$	-	50	W
$V_{CEsat}$	Collector-emitter saturation voltage	$I_C = 4.0A; I_B = 1.0A$	-	5.0	V
$I_{csat}$	Collector saturation current	$f = 16KHz$	-	-	A
$V_F$	Diode forward voltage	$I_F = 4.5A$	1.6	2.0	V
$t_f$	Fall time	$I_{Csat} = 4.5A; f = 16KHz$	0.5	1.0	$\mu s$

### 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
$I_C$	Collector current (DC)		-	5	A
$I_{CM}$	Collector current peak value		-	10	A
$I_B$	Base current (DC)		-	-	A
$I_{BM}$	Base current peak value		-	-	A
$P_{tot}$	Total power dissipation	$T_{mb} \leq 25^\circ C$	-	50	W
$T_{sto}$	Storage temperature		-55	150	$^\circ C$
$T_j$	Junction temperature		-	150	$^\circ C$

### ELECTRICAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	TYP	MAX	UNIT
$I_{CE}$	Collector cut-off current	$V_{BE} = 0V; V_{CE} = V_{CESMmax}$	-	1.0	mA
$I_{CES}$		$V_{BE} = 0V; V_{CE} = V_{CESMmax}$ $T_j = 125^\circ C$	-	2.0	mA
$V_{CEO_{sust}}$	Collector-emitter sustaining voltage	$I_B = 0A; I_C = 100mA$ $L = 25mH$	-	-	V
$V_{CEsat}$	Collector-emitter saturation voltages	$I_C = 4.0A; I_B = 1.0A$	-	5.0	V
$V_{BEsat}$	Base-emitter saturation voltage	$I_C = 4.0A; I_B = 1.0A$	-	1.5	V
$h_{FE}$	DC current gain	$I_C = 0.5A; V_{CE} = 5V$	8	-	
$V_F$	Diode forward voltage		-	-	V
$f_T$	Transition frequency at $f = 5MHz$	$I_C = 0.1A; V_{CE} = 5V$	2	-	MHz
$C_c$	Collector capacitance at $f = 1MHz$	$V_{CB} = 10V$	80	-	pF
$t_s$	Switching times (16KHz line deflection circuit)	$I_{Csat} = 4.5A; L_c = 1mH; C_{fb} = 4nF$	-	-	$\mu s$
$t_f$	Turn-off storage time / Turn-off fall time	$I_{B(end)} = 0.8A; I_C = 4.5A; V_{CC} = 105V$	0.5	1.0	$\mu s$