



**2SD820**

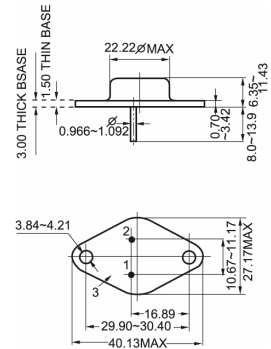
**SILICON DIFFUSED POWER TRANSISTOR**

**GENERAL DESCRIPTION**

Highvoltage,high-speed switching npn transistors in a metal envelope , primarily for use in switching power circuites of colour television receivers



TO-3



**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)		-	5	A
$I_{CM}$	Collector current peak value		-		A
$P_{tot}$	Total power dissipation	$T_{mb} \leq 25^\circ C$	-	50	W
$V_{CEsat}$	Collector-emitter saturation voltage	$I_C = 4.0A; I_B = 0.8A$		5	V
$I_{csat}$	Collector saturation current	$f = 16KHz$		-	A
$V_F$	Diode forward voltage				V
$t_f$	Fall time	$I_{Csat} = 4.0A; f = 16KHz$		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		-		A
$I_B$	Base current (DC)		-	1	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	MIN	MAX	UNIT
$I_{CE}$	Collector-emitter cut-off current	$V_{BE} = 0V; V_{CE} = V_{CESMmax}$	-	0.1	mA
$I_{CES}$		$V_{BE} = 0V; V_{CE} = V_{CESMmax}$	-	0.2	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	$I_C = 4.0A; I_B = 0.8A$	-	5	V
$V_{BEsat}$	Base-emitter saturation voltage	$I_C = 4.0A; I_B = 0.8A$	-	1.5	V
$h_{FE}$	DC current gain	$I_C = 1.0A; V_{CE} = 5V$	8	40	
$V_F$	Diode forward voltage				V
$f_T$	Transition frequency at $f = 1MHz$	$I_C = 1.0A; V_{CE} = 10V$	1.0	-	MHz
$C_c$	Collector capacitance at $f = 1MHz$	$V_{CB} = 10V$		165	pF
$t_s$	Switching times(16KHz line deflecton circuit)	$I_C=4.0A, I_{B1}=-I_{B2}=0.8A, V_{CC}=105V$		-	$\mu s$
$t_f$	Turn-off storage time Turn-off fall time	$I_C=4.0A, I_{B1}=-I_{B2}=0.8A, V_{CC}=105V$		1.0	$\mu s$