

Silicon Diffused Power Transistor

BU4530AL

GENERAL DESCRIPTION

Enhanced performance, new generation, high-voltage, high-speed switching npn transistor in a plastic envelope intended for use in horizontal deflection circuits of colour television receivers and p.c monitors. Features exceptional tolerance to base drive and collector current load variations resulting in a very low worst case dissipation.

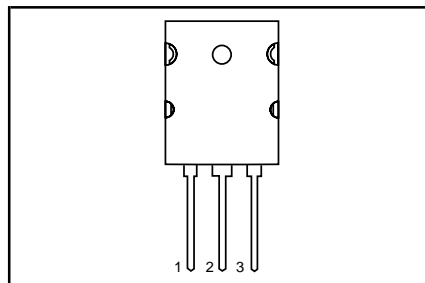
QUICK REFERENCE DATA

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
V_{CESM}	Collector-emitter voltage peak value	$V_{BE} = 0$	-	1500	V
V_{CEO}	Collector-emitter voltage (open base)		-	800	V
I_C	Collector current (DC)		-	16	A
I_{CM}	Collector current peak value		-	40	A
P_{tot}	Total power dissipation	$T_{mb} \leq 25\text{ }^\circ\text{C}$	-	125	W
V_{CEsat}	Collector-emitter saturation voltage	$I_C = 10\text{ A}; I_B = 2.22\text{ A}$	-	3.0	V
I_{Csat}	Collector saturation current	$f = 32\text{ kHz}$	9	-	A
		$f = 90\text{ kHz}$	8	-	A
t_f	Fall time.	$I_{Csat} = 9.0\text{ A}; f = 32\text{ kHz}$	0.20	0.26	μs
		$I_{Csat} = 8.0\text{ A}; f = 90\text{ kHz}$	0.12	-	μs

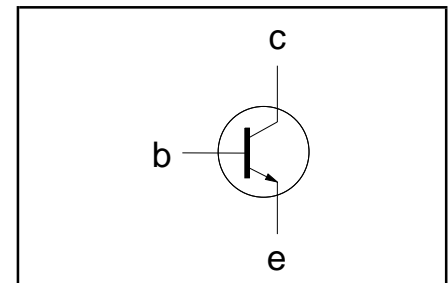
PINNING - SOT430

PIN	DESCRIPTION
1	base
2	collector
3	emitter
heat sink	collector

PIN CONFIGURATION



SYMBOL



LIMITING VALUES

Limiting values in accordance with the Absolute Maximum Rating System (IEC 134)

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{CESM}	Collector-emitter voltage peak value	$V_{BE} = 0\text{ V}$	-	1500	V
V_{CEO}	Collector-emitter voltage (open base)		-	800	V
I_C	Collector current (DC)		-	16	A
I_{CM}	Collector current peak value		-	40	A
I_B	Base current (DC)		-	10	A
I_{BM}	Base current peak value		-	15	A
P_{tot}	Total power dissipation	$T_{mb} \leq 25\text{ }^\circ\text{C}$	-	125	W
T_{stg}	Storage temperature		-55	150	$^\circ\text{C}$
T_j	Junction temperature		-	150	$^\circ\text{C}$

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THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
$R_{th\ j-mb}$	Junction to mounting base	-	-	1.0	K/W
$R_{th\ j-a}$	Junction to ambient	in free air	35	-	K/W

STATIC CHARACTERISTICS

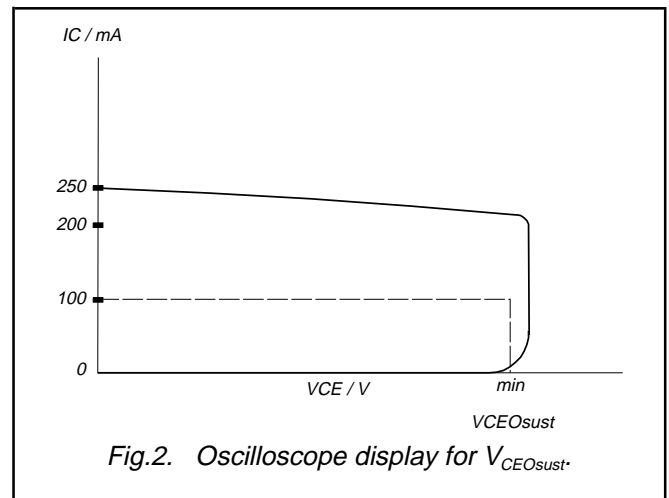
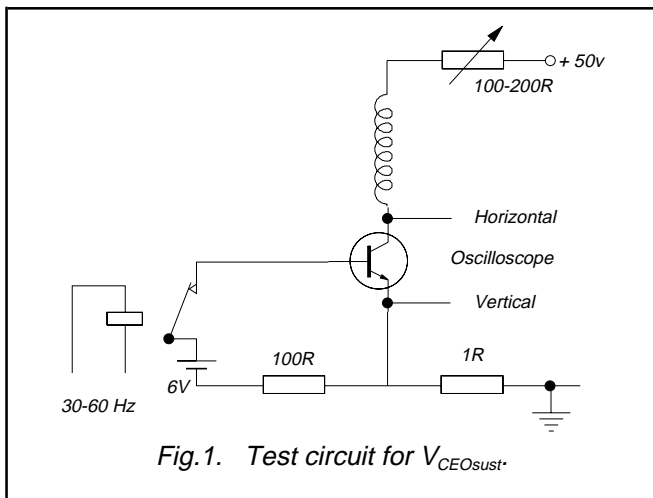
$T_{mb} = 25\text{ }^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I_{CES}	Collector cut-off current ¹	$V_{BE} = 0\text{ V}; V_{CE} = V_{CESMmax}$	-	-	1.0	mA
I_{CES}		$V_{BE} = 0\text{ V}; V_{CE} = V_{CESMmax}; T_j = 125\text{ }^\circ\text{C}$	-	-	2.0	mA
BV_{EBO}	Base-emitter breakdown voltage	$I_B = 1\text{ mA}$	7.5	12.8	-	V
$V_{CEOsust}$	Collector-emitter breakdown voltage	$I_B = 0\text{ A}; I_C = 100\text{ mA}; L = 25\text{ mH}$	800	-	-	V
V_{CEsat}	Collector-emitter saturation voltage	$I_C = 10\text{ A}; I_B = 2.22\text{ A}$	-	-	3.0	V
V_{BEsat}	Base-emitter saturation voltage	$I_C = 10\text{ A}; I_B = 2.22\text{ A}$	0.83	0.92	1.01	V
h_{FE}	DC current gain	$I_C = 1\text{ A}; V_{CE} = 5\text{ V}$	-	12	-	
h_{FE}		$I_C = 10\text{ A}; V_{CE} = 5\text{ V}$	4.8	6.6	8.5	

DYNAMIC CHARACTERISTICS

$T_{mb} = 25\text{ }^\circ\text{C}$ unless otherwise specified

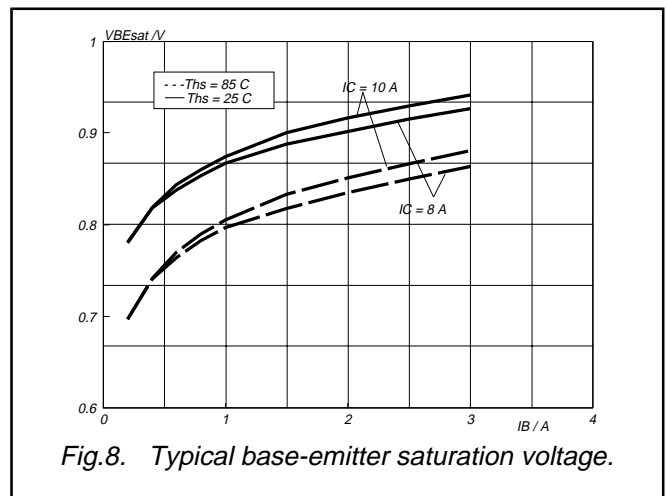
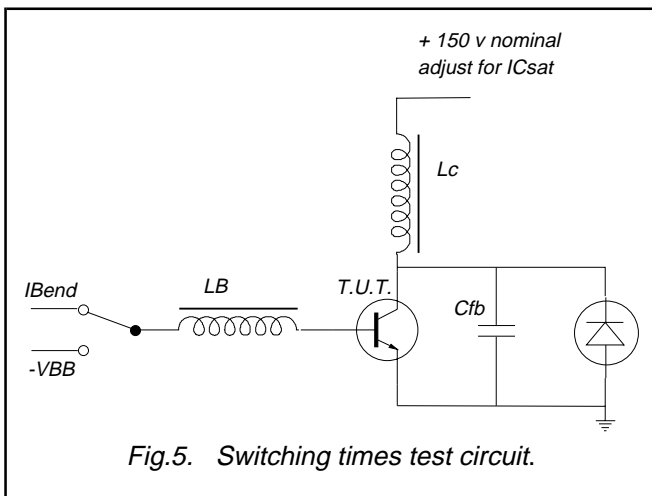
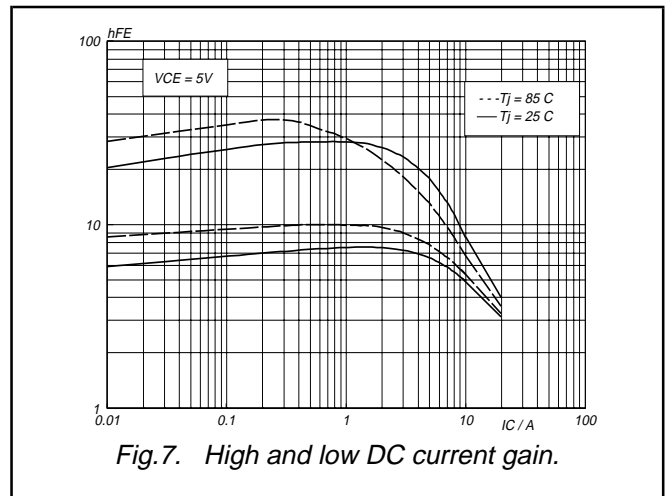
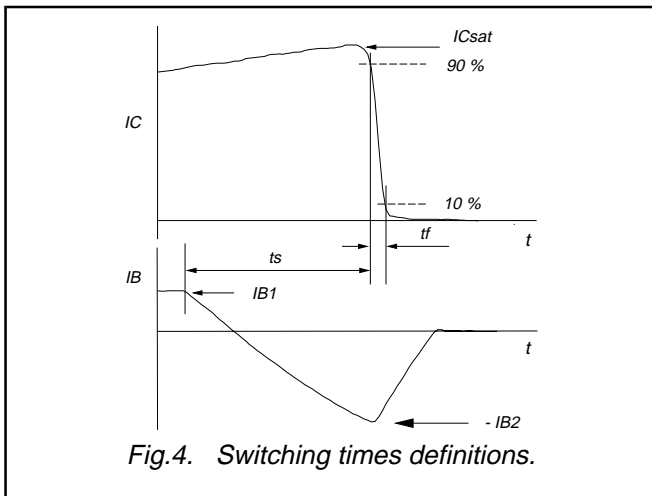
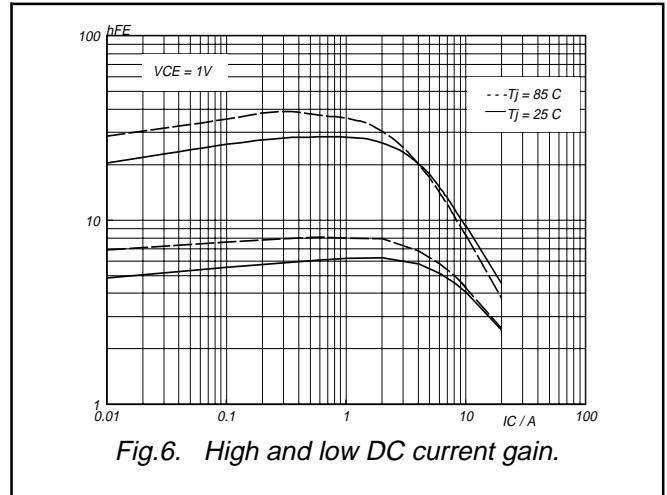
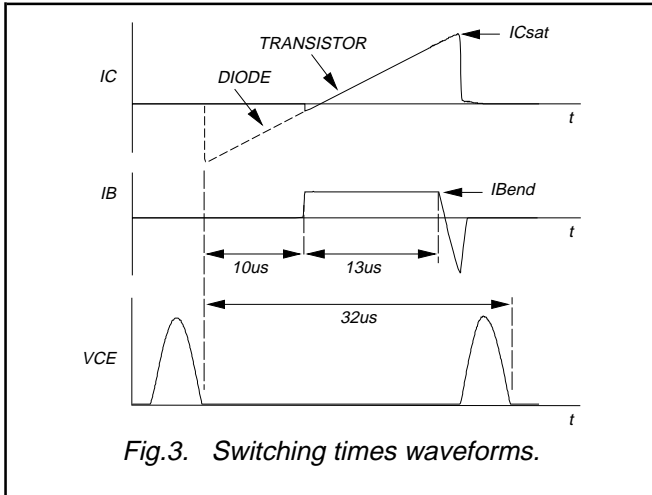
SYMBOL	PARAMETER	CONDITIONS	TYP.	MAX.	UNIT
t_s t_f	Switching times (32 kHz line deflection dynamic test circuit). Turn-off storage time Turn-off fall time	$I_{Csat} = 9.0\text{ A}; I_{B1} = 1.8\text{ A}; (I_{B2} = -4.5\text{ A})$	3.0 0.20	4.0 0.26	μs μs
t_s t_f	Switching times (90 kHz line deflection dynamic test circuit). Turn-off storage time Turn-off fall time	$I_{Csat} = 8\text{ A}; I_{B1} = 1.6\text{ A}; (I_{B2} = -4.0\text{ A})$	2 0.12	- -	μs μs



¹ Measured with half sine-wave voltage (curve tracer).

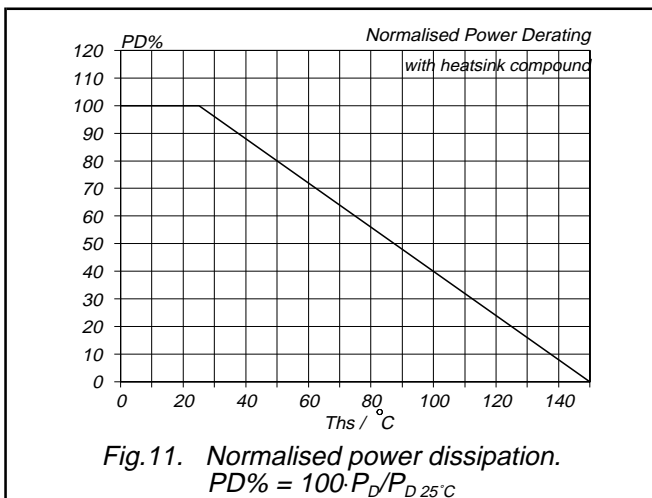
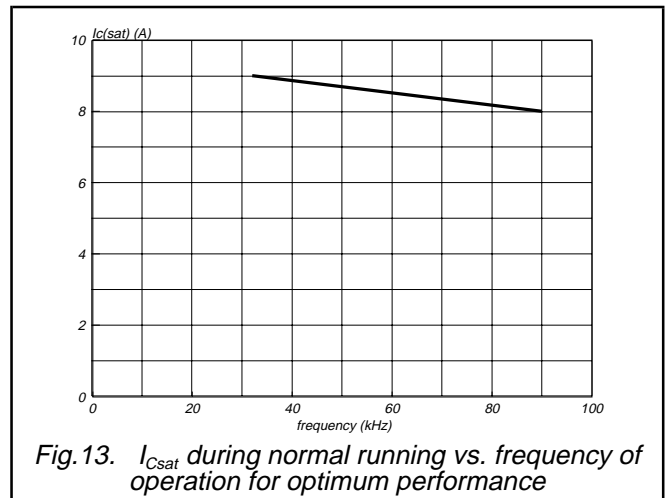
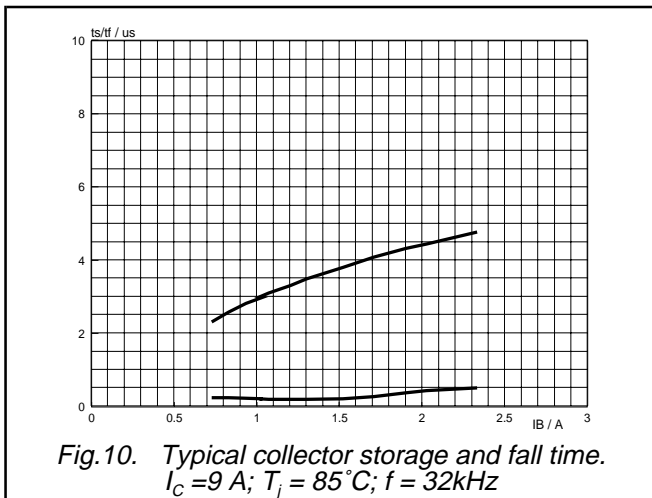
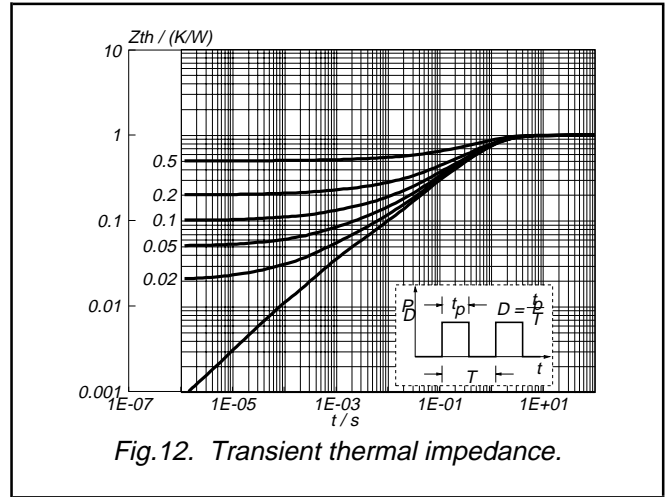
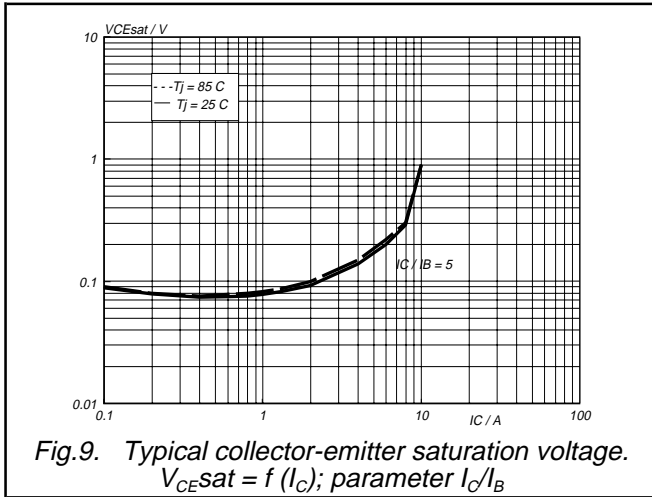
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MECHANICAL DATA

