



HD1530JL

High Voltage NPN Power Transistor for High Definition and New Super-Slim CRT Display

PRELIMINARY DATA

Features

- STATE-OF-THE-ART TECHNOLOGY: DIFFUSED COLLECTOR "ENHANCED GENERATION" EHVS1
- WIDER RANGE OF OPTIMUM DRIVE CONDITIONS
- LESS SENSITIVE TO OPERATING TEMPERATURE VARIATION

Applications

- HORIZONTAL DEFLECTION OUTPUT FOR DIGITAL TV, HDTV, AND HIGH -END MONITORS

Description

The device uses a Diffused Collector in Planar technology which adopts "Enhanced High Voltage Structure" (EHVS1) that was developed to fit High-Definition CRT displays.

The new HD product series features improved silicon efficiency, bringing updated performance to Horizontal Deflection output stages.

Figure 1. Package

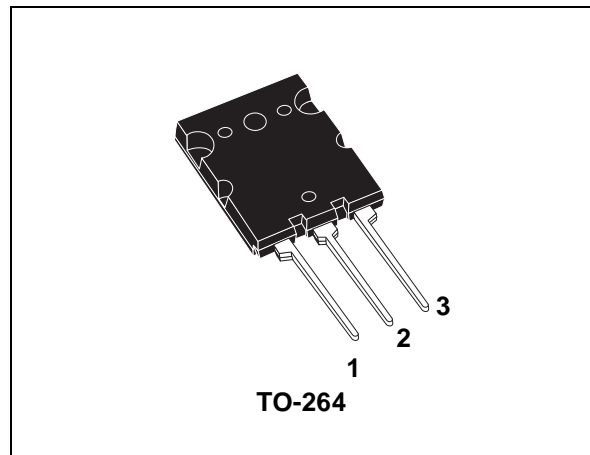


Figure 2. Internal Schematic Diagram

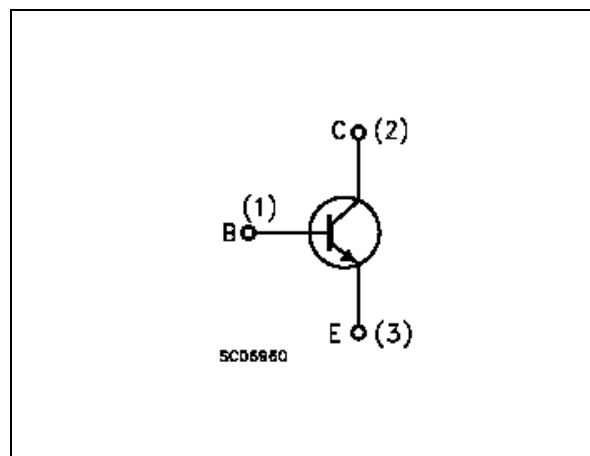


Table 1. Order Codes

Part Number	Marking	Package	Packing
HD1530JL	HD1530JL	TO-264	TUBE

Table 2. Absolute Maximum Rating

Symbol	Parameter	Value	Unit
V_{CES}	Collector-Emitter Voltage ($V_{BE} = 0$)	1500	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	700	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	10	V
I_C	Collector Current	26	A
I_{CM}	Collector Peak Current ($t_p < 5ms$)	40	A
I_B	Base Current	10	A
I_{BM}	Base Peak Current ($t_p < 5ms$)	20	A
P_{TOT}	Total dissipation at $T_C = 25^\circ C$	200	W
T_{STG}	Storage Temperature	-65 to 150	$^\circ C$
T_J	Max. Operating Junction Temperature	150	$^\circ C$

Table 3. Thermal Data

Symbol	Parameter	Value	Unit
R_{thJC}	Thermal Resistance Junction-Case Max	0.625	$^\circ C/W$

Table 4. Electrical Characteristics ($T_{CASE} = 25^\circ C$; unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cut-off Current ($V_{BE} = 0$)	$V_{CE} = 1500V$			0.2	mA
		$V_{CE} = 1500V$ $T_C = 125^\circ C$			2	mA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 5V$			10	μA
$V_{CEO(sus)}$ <i>Note: 1</i>	Collector-Emitter Sustaining Voltage ($I_B = 0$)	$I_C = 10mA$	700			V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	$I_E = 10mA$	10			V
$V_{CE(sat)}$ <i>Note: 1</i>	Collector-Emitter Saturation Voltage	$I_C = 13A$ $I_B = 3.25A$			2.5	V
$V_{BE(sat)}$ <i>Note: 1</i>	Base-Emitter Saturation Voltage	$I_C = 13A$ $I_B = 3.25A$		1	1.5	V
h_{FE}	DC Current Gain	$I_C = 1A$ $V_{CE} = 5V$		28		
		$I_C = 13A$ $V_{CE} = 5V$	5		8	
t_s t_f	INDUCTIVE LOAD Storage Time Fall Time	$I_C = 12A$ $f_h = 32KHz$ $I_{B(on)} = 1.5A$ $I_{B(off)} = -6.1A$		3.3		μs
				240		ns
t_s t_f	INDUCTIVE LOAD Storage Time Fall Time	$I_C = 12A$ $f_h = 48KHz$ $I_{B(on)} = 2A$ $I_{B(off)} = -6.7A$		2.8		μs
				200		ns
t_s t_f	INDUCTIVE LOAD Storage Time Fall Time	$I_C = 6.5A$ $f_h = 100KHz$ $I_{B(on)} = 0.9A$ $I_{B(off)} = -4.6A$		1.5		μs
				110		ns

Note: 1 Pulsed duration = 300 μs , duty cycle $\leq 1.5\%$.

Table 5. TO-264 Mechanical Data

DIM.	mm.			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.80		5.20	0.189		0.205
D	2.50		3.10	0.098		0.122
E	0.50	0.60	0.85	0.020	0.24	0.033
F	0.90	1.00	1.25	0.036	0.039	0.049
G	10.30		11.50	0.406		0.453
G1		5.45			0.215	
H	19.80		20.20	0.780		0.795
L3	25.80		26.20	1.016		1.031
L5	5.80		6.20	0.228		0.244
L7	19.50		20.50	0.768		0.807
N	2.30		2.70	0.091		0.106
R	4.7		5.10	0.185		0.201
DIA	3.10		3.50	0.122		0.138

Figure 3. TO-264 Drawing

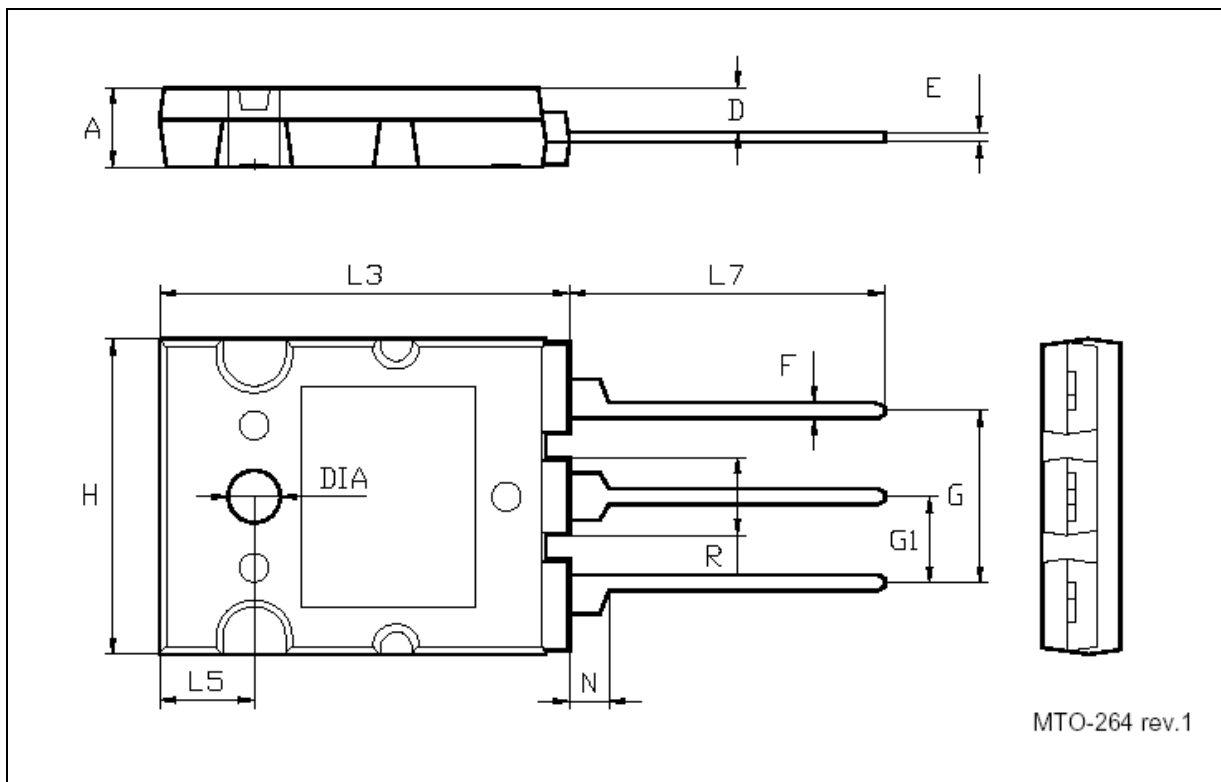


Table 6. Revision History

Date	Revision	Changes
05-July-2005	1	Initial release.

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