



## 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

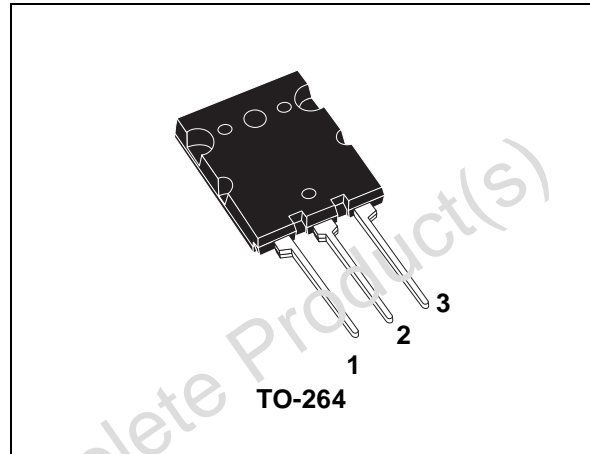


Figure 2. Internal Schematic Diagram

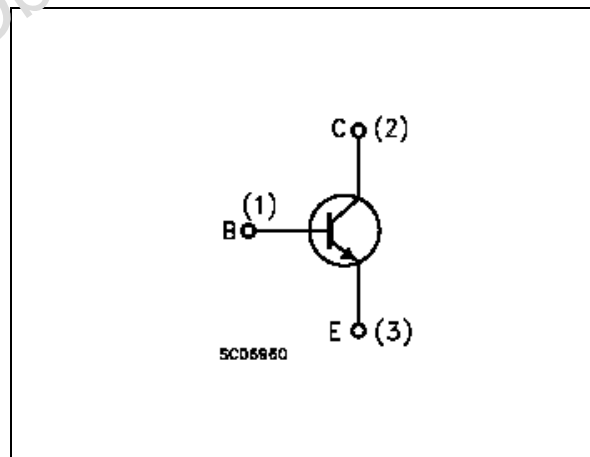


Table 1. Order Codes

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)

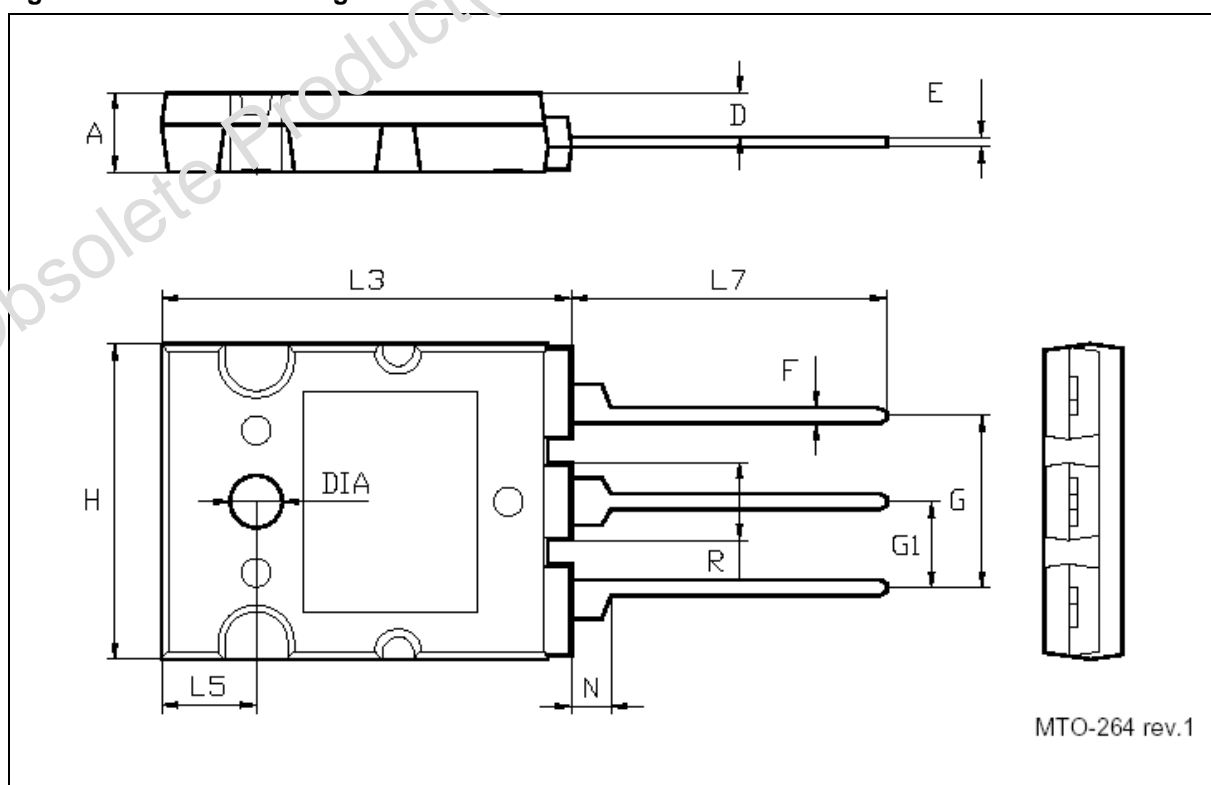
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CES}$	Collector Cut-off Current ( $V_{BE} = 0$ )	$V_{CE} = 1500V$ $V_{CE} = 1500V$ $T_C = 125^\circ C$			0.2 2	mA mA
$I_{EBO}$	Emitter Cut-off Current ( $I_C = 0$ )	$V_{EB} = 5V$			10	$\mu A$
$V_{CEO(sus)}$ Note: 1	Collector-Emitter Sustaining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

Note: 1 Pulsed duration = 300  $\mu s$ , 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.

Obsolete Product(s) - Obsolete Product(s)

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