

COMPLEMENTARY POWER TRANSISTORS

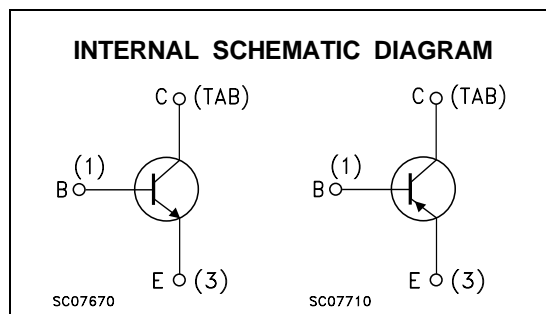
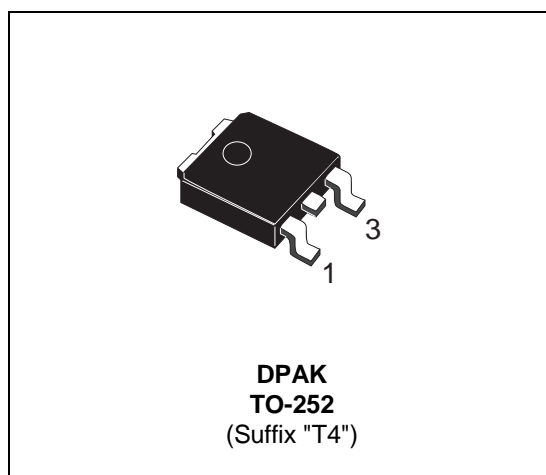
- STMicroelectronics PREFERRED SALESTYPES
- SURFACE-MOUNTING TO-252 (DPAK) POWER PACKAGE IN TAPE & REEL (SUFFIX "T4")
- ELECTRICALLY SIMILAR TO MJE2955T AND MJE3055T

APPLICATIONS

- GENERAL PURPOSE SWITCHING AND AMPLIFIER

DESCRIPTION

The MJD2955 and MJD3055 form complementary PNP-NPN pairs. They are manufactured using Epitaxial Base technology for cost-effective performance.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		NPN	MJD3055	
		PNP	MJD2955	
V_{CBO}	Collector-Base Voltage ($I_E = 0$)		70	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)		60	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)		5	V
I_C	Collector Current		10	A
I_B	Base Current		6	A
P_{tot}	Total Dissipation at $T_c = 25^\circ\text{C}$		20	W
T_{stg}	Storage Temperature		-65 to 150	$^\circ\text{C}$
T_j	Max. Operating Junction Temperature		150	$^\circ\text{C}$

For PNP type voltage and current values are negative.

MJD2955 / MJD3055

THERMAL DATA

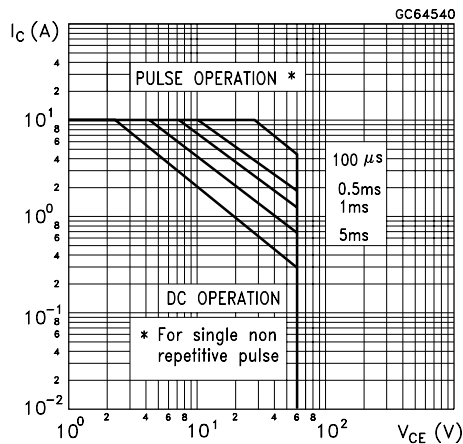
$R_{thj-case}$	Thermal Resistance Junction-case	Max	6.25	$^{\circ}C/W$
$R_{thj-amb}$	Thermal Resistance Junction-ambient	Max	100	$^{\circ}C/W$

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

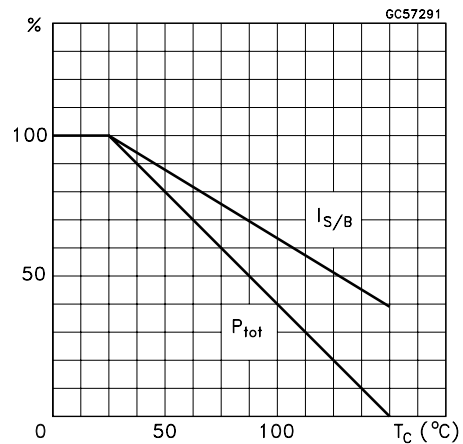
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEX}	Collector Cut-off Current ($V_{BE} = -1.5 V$)	$V_{CE} = 70 V$ $V_{CE} = 70 V$ $T_j = 150^{\circ}C$			20 2	μA mA
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CB} = 70 V$ $V_{CB} = 70 V$ $T_j = 150^{\circ}C$			20 2	μA mA
I_{CEO}	Collector Cut-off Current ($I_B = 0$)	$V_{CE} = 30 V$			50	μA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 5 V$			0.5	mA
$V_{CEO(sus)*}$	Collector-Emitter Sustaining Voltage ($I_B = 0$)	$I_C = 30 mA$	60			V
$V_{CE(sat)*}$	Collector-Emitter Saturation Voltage	$I_C = 4 A$ $I_B = 0.4 A$ $I_C = 10 A$ $I_B = 3.3 A$			1.1 8	V V
$V_{BE(on)*}$	Base-Emitter Voltage	$I_C = 4 A$ $V_{CE} = 4 V$			1.8	V
h_{FE*}	DC Current Gain	$I_C = 4 A$ $V_{CE} = 4 V$ $I_C = 10 A$ $V_{CE} = 4 V$	20 5		100	
f_T	Transition Frequency	$I_C = 0.5 A$ $V_{CE} = 10 V$ $f = 500 KHz$	2			MHz

* Pulsed: Pulse duration = 300 μs , duty cycle 1.5 %
For PNP type voltage and current values are negative.

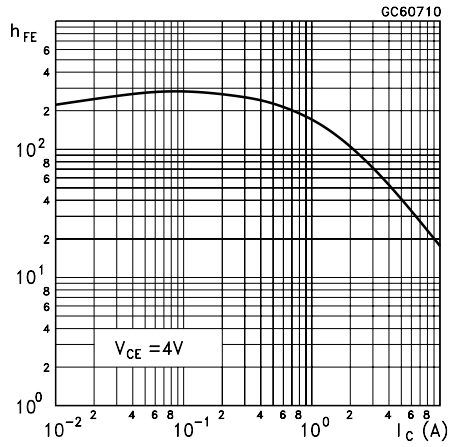
Safe Operating Area



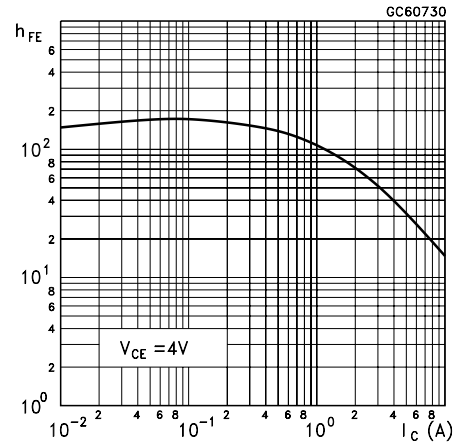
Derating Curves



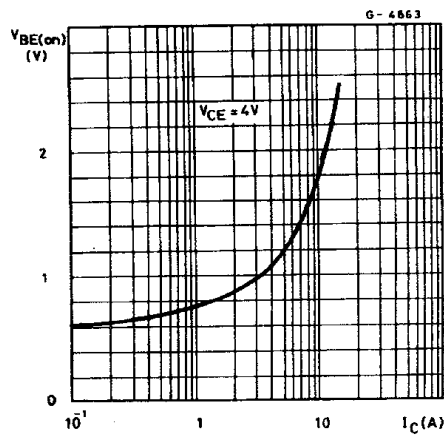
DC Current Gain (NPN type)



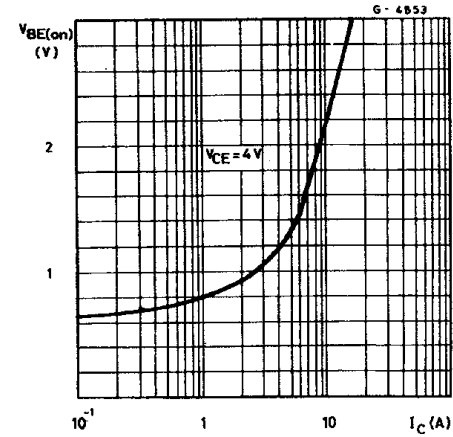
DC Current Gain (PNP type)



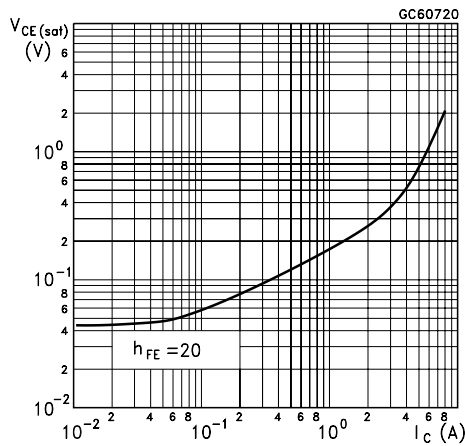
DC Transconductance (NPN type)



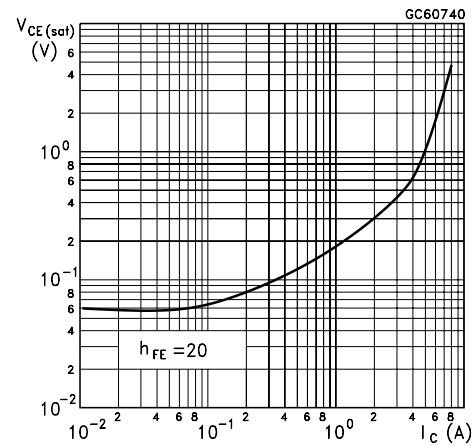
DC Transconductance (PNP type)



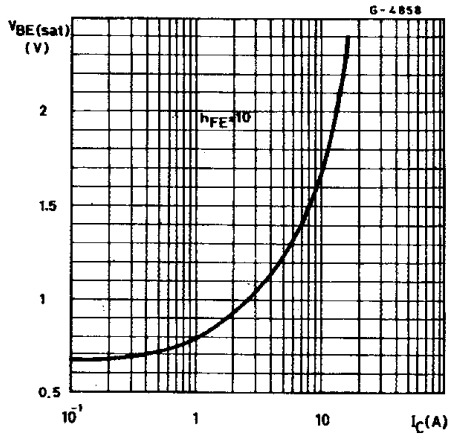
Collector-Emitter Saturation Voltage (NPN type)



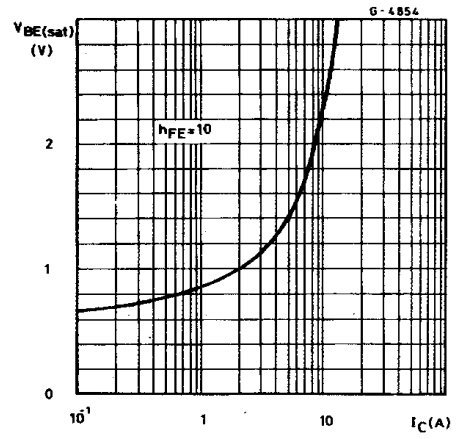
Collector-Emitter Saturation Voltage (PNP type)



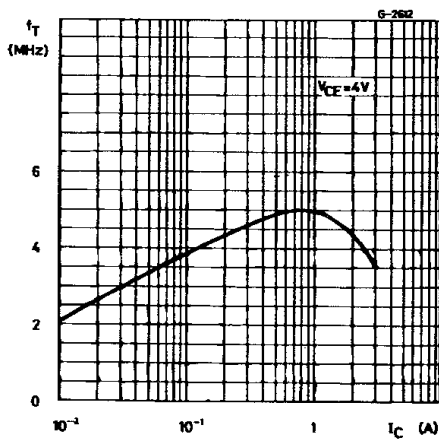
Base-Emitter Saturation Voltage (NPN type)



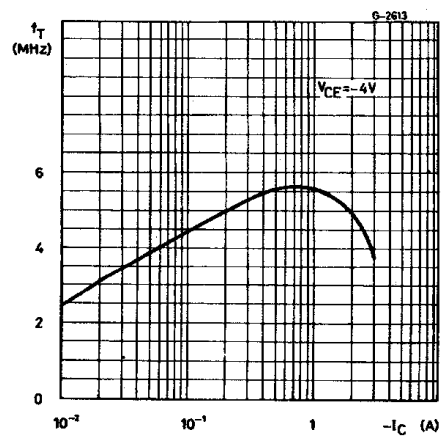
Base-Emitter Saturation Voltage (PNP type)



Transition Frequency (NPN type)

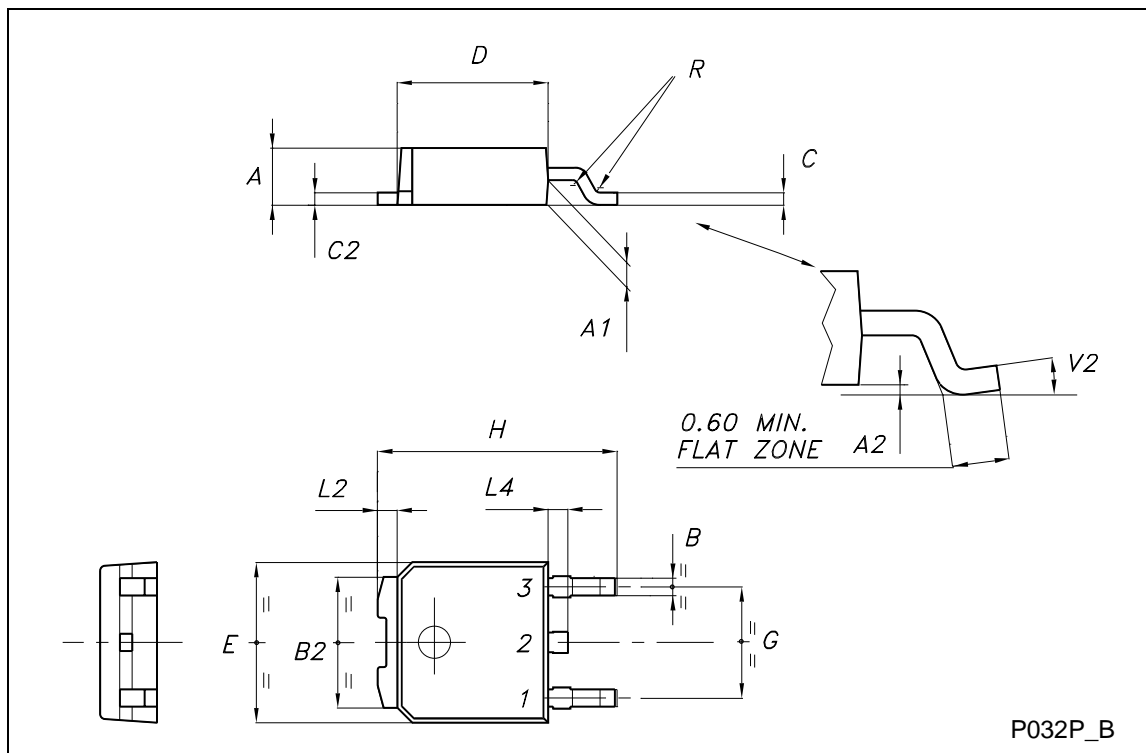


Transition Frequency (PNP type)



TO-252 (DPAK) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	2.20		2.40	0.087		0.094
A1	0.90		1.10	0.035		0.043
A2	0.03		0.23	0.001		0.009
B	0.64		0.90	0.025		0.035
B2	5.20		5.40	0.204		0.213
C	0.45		0.60	0.018		0.024
C2	0.48		0.60	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.60	0.252		0.260
G	4.40		4.60	0.173		0.181
H	9.35		10.10	0.368		0.398
L2		0.8			0.031	
L4	0.60		1.00	0.024		0.039
V2	0°		8°	0°		0°



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