TUNGSRAM

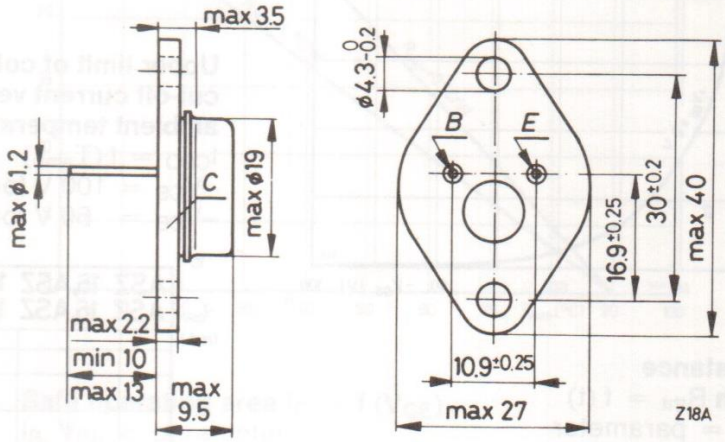
SEMI-CONDUCTOR DEVICES '80/81

DIODES
RECTIFIERS
THYRISTORS
TRANSISTORS

PNP Germanium Alloy Transistors

intended for use in AF power stages and for switching purposes. The collector is electrically connected to the case. For isolated mounting, as requested, one insulating washer and two insulating bushes are supplied. The devices are available in matched pairs (2-ASZ 1015, 2-ASZ 1016, 2-ASZ 1017, 2-ASZ 1018), too.

Dimensions in mm



Case: TO-3

Mass: approx. 15 g

Accessories (available as requested)

Insulating washer: CL-MO24/C
Insulating bush: VA-M168/B

Absolute maximum ratings		**ASZ 1015**	**ASZ 1016**	**ASZ 1017**	**ASZ 1018**	
Collector-base voltage[1]	$-V_{CBO}$	80	60	60	80	V
Collector-emitter voltage[2]	$-V_{CEO}$	60	32	32	32	V
Emitter-base voltage	$-V_{EBO}$	40	20	20	40	V
Collector current	$-I_C$		6			A
Peak collector current	$-I_{CM}$		6			A
Base current	$-I_B$		1			A
Peak base current	$-I_{BM}$		2			A
Emitter current	I_E		7.2			A
Peak emitter current	I_{EM}		8			A
Junction temperature	T_j		90			°C
Peak junction temperature	T_{jM}		100			°C
Storage temperature	T_s		−55 . . . + 75			°C
Total power dissipation[3]	P_{tot}		22.5			W

Thermal resistance

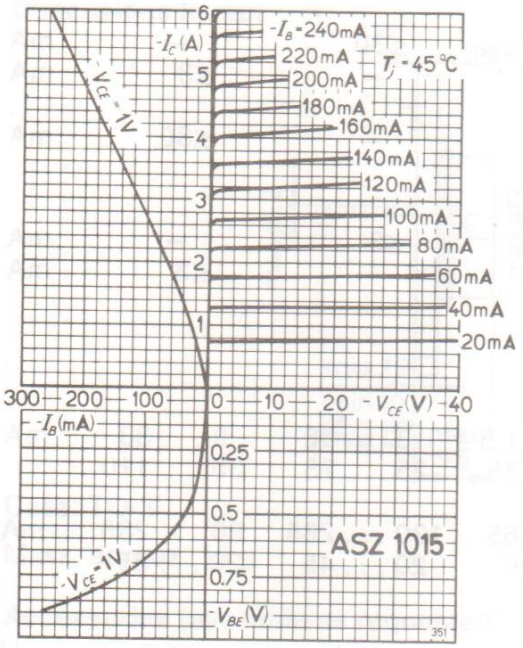
junction to case	R_{thjc}	= 2	K/W
case to heat sink	R_{thch}	= 0.5	K/W
case to heat sink with a simple mica isolation	R_{thch}	= 1	K/W

[1] Permitted at switching over from a thermostable "on" state to "off" state in case $T_{amb} \leq 55°C$ and $R_{thja} \leq 9$ K/W
[2] see limit curves, too
[3] $T_{case} \leq 45°C$

Static characteristics[1]		**ASZ 1015**	**ASZ 1016**	**ASZ 1017**	**ASZ 1018**	
T_{amb} = 25°C						
Collector-base cut-off current						
$-V_{CB}$ = 0.5 V	$-I_{CBO}$	≤100	≤100	≤100	≤100	µA
$-V_{CB}$ = 60 V	$-I_{CBO}$	–	≤3	≤3	–	mA
$-V_{CB}$ = 60 V, T_j = 100°C	$-I_{CBO}$	–	≤30	≤30	–	mA
$-V_{CB}$ = 80 V	$-I_{CBO}$	≤3	–	–	≤3	mA
$-V_{CB}$ = 80 V, T_j = 100°C	$-I_{CBO}$	≤30	–	–	≤30	mA
Emitter-base cut-off current						
$-V_{EB}$ = 20 V	$-I_{EBO}$	–	≤3	≤3	–	mA
$-V_{EB}$ = 40 V	$-I_{EBO}$	≤3	–	–	≤3	mA
Base current and DC forward current transfer ratio						
$-V_{CB}$ = 0 V, I_E = 1 A	$-I_B$	17.5 . . . 50	7.2 . . . 21.5	13 . . . 38	9 . . . 33	mA
	h_{21E}	20 . . . 55	45 . . . 135	25 . . . 75	30 . . . 110	
$-V_{CB}$ = 0 V, I_E = 6 A	$-I_B$	190 . . . 375	73 . . . 165	130 . . . 285	90 . . . 285	mA
	h_{21E}	15 . . . 30	35 . . . 80	20 . . . 45	20 . . . 65	
Base-emitter voltage						
$-V_{CB}$ = 0 V, I_E = 6 A	$-V_{BE}$	≤1.6	≤1.4	≤1.4	≤1.6	V
Collector-emitter saturation voltage						
$-I_C$ = 6 A, $-I_B$ = 0.6 A	$-V_{CEsat}$	≤1	≤1	≤1	≤1	V
Dynamic characteristics						
T_{amb} = 25°C						
Transition frequency[1]						
$-V_{CE}$ = 5 V, $-I_C$ = 1 A	f_T	200	250	220	220	kHz
Collector-base capacitance						
$-V_{CB}$ = 12 V, f = 300 kHz	C_{CBO}		160			pF
Emitter-base capacitance						
$-V_{EB}$ = 6 V, f = 300 kHz	C_{EBO}		165			pF
Pair conditions[1]						
T_{amb} = 25°C						
$-V_{CB}$ = 0 V, I_E = 1 A	h_{21E}-ratio		≤1.25			
$-V_{CB}$ = 0 V, I_E = 6 A	h_{21E}-ratio		≤1.25			

[1] measured under pulsed conditions

Transfer, output and input characteristics
T_j = 45 °C
I_C = f (I_B), $-V_{CE}$ = 1 V
I_C = f (V_{CE}), $-I_B$ = parameter
V_{BE} = f (I_B), $-V_{CE}$ = 1 V



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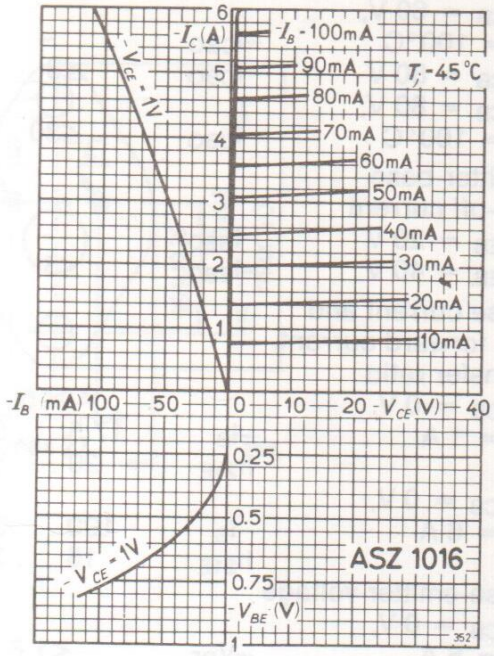

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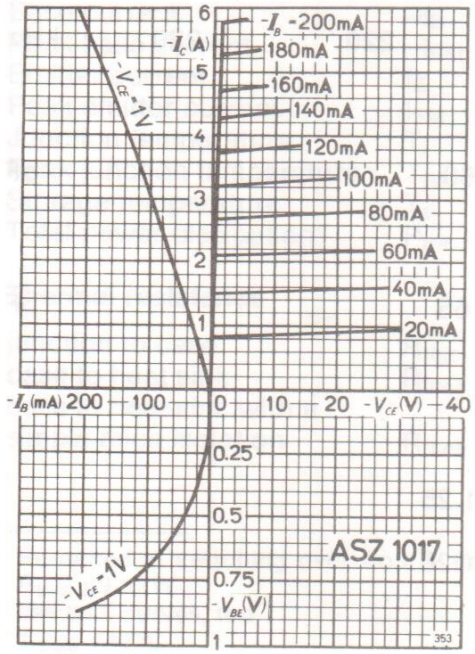

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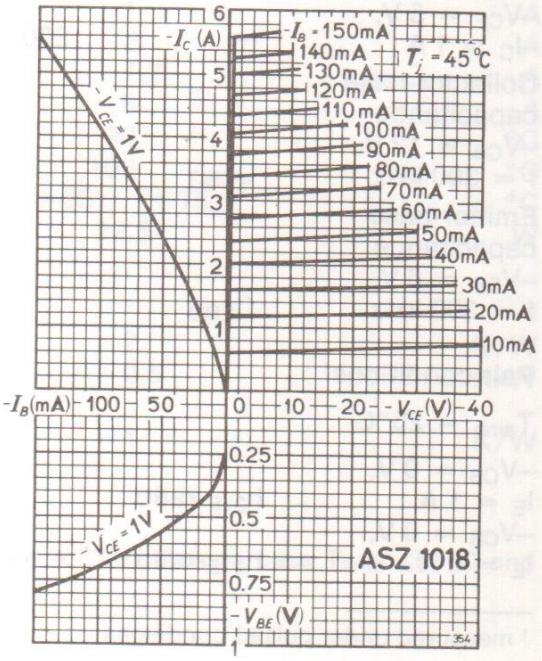
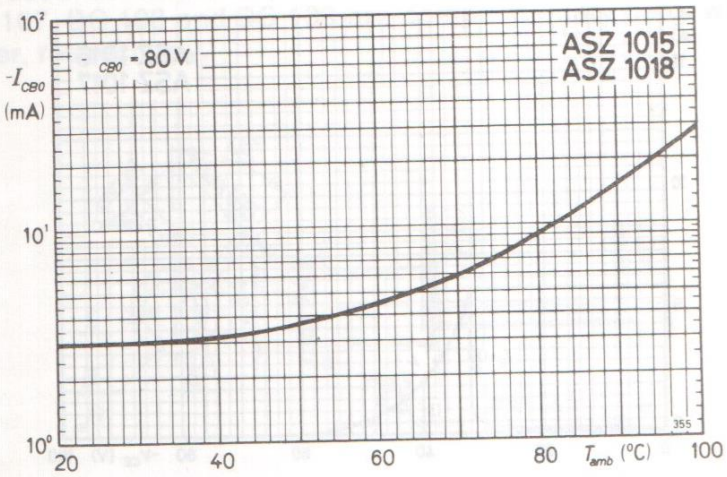
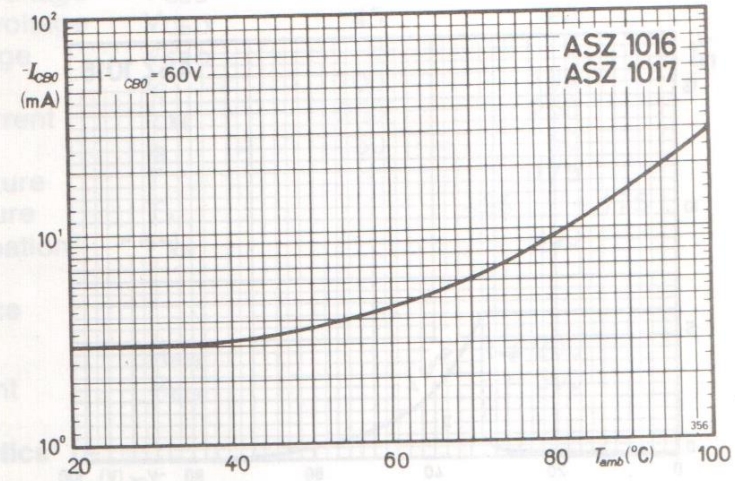


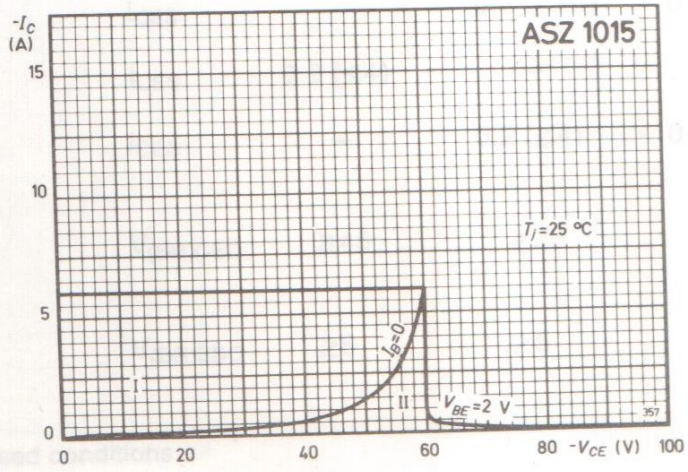
Collector-base cut-off current versus ambient temperature
$I_{CBO} = f(T_{amb})$, $-V_{CB} = 80$ V



Collector-base cut-off current versus ambient temperature
$I_{CBO} = f(T_{amb})$, $-V_{CB} = 60$ V



Safe operating area $I_C = f(V_{CE})$
$T_j = 25$°C
I_B, V_{BE} = parameter



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$T_j = 25°C$
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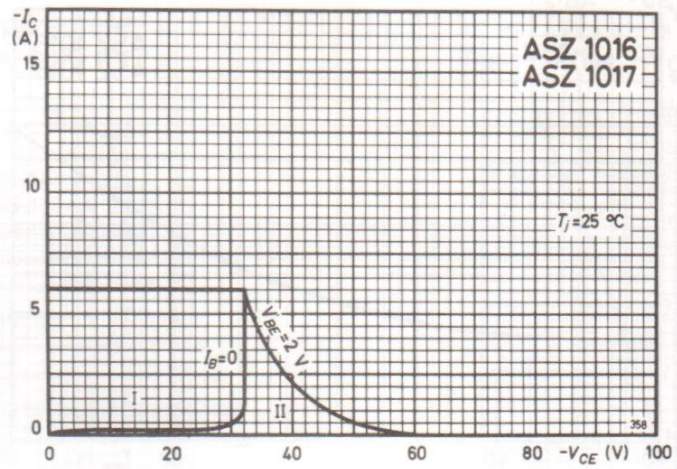

Safe operating area $I_C = f(V_{CE})$
$T_j = 25°C$
I_B, V_{BE} = parameter