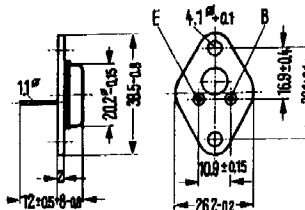


AD 149, AD 150

PNP Transistors for AF power stages up to 20 W

AD 149 and AD 150 are germanium PNP alloyed transistors in a TO-3 package. The collector is electrically connected to the case. For insulated mounting of these transistors on a chassis, the insulating parts Q 62901-B 11-A and Q 62901-B 13-B are provided. These parts have to be ordered separately. AD 149 and 150 are recommended for use in high-quality AF power stages. For use in push-pull power stages, these transistors are also available in pairs.

Weight approx. 16.5 g Dimensions in mm



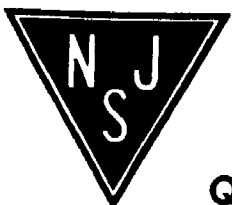
Maximum ratings		AD 149	AD 150	
Collector-base voltage	$-V_{CBO}$	-	32	V
Collector-emitter voltage	$-V_{CEO}$	30	30	V
Collector-emitter voltage ($V_{BE} = 2 V$)	$-V_{CEV}$	50	32	V
Emitter-base voltage	$-V_{EBO}$	20	10	V
Collector current	$-I_C$	3.5	3.5	A
Base current	$-I_B$	600	600	mA
Junction temperature	T_j	100	100	°C
Storage temperature	T_s	-55...+100	-55...+100	°C
Total power dissipation; see diagram $P_{tot} = F(T_{case})$	P_{tot}	25,5	25,5	W
Thermal resistance				
Junction to case	$R_{th J case}$	≤ 2	≤ 2	°C/W

Static characteristics ($T_{case} = 25 °C$)

The transistors AD 149, AD 150 are classified in groups of static forward current transfer ratio B ($-I_C = 1 A$), which are indicated by Roman numerals. The following values apply at a collector-emitter voltage $V_{CE} = 1 V$ and the following collector currents:

B-groups	IV	V			
type	AD 149/150	AD 149/150	AD 149/150	AD 149/150	AD 149/150
I_C	B	B	$-V_{BE}$	$-V_{CE sat}^1)$	$-V_{CE sat}^2)$
A	I_C/I_B	I_C/I_B	V	V	V
0,05	50	82	0,2 (< 0,35)	-	-
1	45 (30...60)	75 (50...100)	0,46 (< 0,7)	-	-
3	38	63	0,75 (< 1,1)	0,3 (< 0,6)	0,4 (< 0,7)

1) The transistor is overdriven to such an extent that the static forward current transfer ratio has decreased to B = 10 ($-I_C = 3A$; B = 10)
2) ($I_C = 3A$ applies for the characteristics curve which, at constant base current, passes the point $I_C = 3.3 A$, $V_{CE} = 1V$).



ELECTRICAL SPECIFICATIONS (at 25°C unless noted)

Parameter	Symbol	Min.	Typical	Max.	Units	Test Conditions
SUBGROUP 1 Visual & Mechanical						
SUBGROUP 2 (25°C TESTS)						
Off-State Current	I_{DRM}	—	.01	0.1	μA	$R_{GK} = 1K, V_{DRM} = \text{Rating}$
Reverse Current	I_{RRM}	—	.01	0.1	μA	$R_{GK} = 1K, V_{RRM} = \text{Rating}$
Reverse Gate Current	I_{GR}	—	0.1	0.2	μA	$V_{GR} = 2V$
Gate Trigger Current	I_{GT}	—	0.2	2.0	μA	$R_{GS} = 10K, V_D = 5V$
AD100-104		—	0.2	2.0	μA	
AD107-111		—	2.0	20	μA	
AD114-118		—	20	200	μA	
Gate Trigger Voltage	V_{GT}	0.44	0.52	0.60	V	$R_{GS} = 100\Omega, V_D = 5V$
On-State Voltage	V_T	—	1.1	1.5	V	$I_T = 1.0 \text{ Amp (pulse)}$
Holding Current	I_H	0.3	0.5	2.0	mA	$R_{CK} = 1K$
SUBGROUP 3 (25°C TESTS)						
On-State Voltage-Critical Rate of Rise	dv/dt	50	100	—	V/ μS	$R_{CK} = 1K, V_D = 30V$
Gate Trigger-on Pulse Width	$t_{PO}(\text{on})$	—	0.5	2.0	μS	$I_G = 10mA, I_T = 1A, V_D = 30V$
Delay Time	t_d	—	0.6	—	μS	$I_G = 10mA, I_T = 1A, V_D = 30V$
Rise Time	t_r	—	0.4	—	μS	$I_G = 10mA, I_T = 1A, V_D = 30V$
Circuit Commutated Turn-off Time	t_q	—	20	50	μS	$I_T = 1A, I_R = 1A, R_{CK} = 1K$
SUBGROUP 4 (125°C TESTS)						
Off-State Current	I_{DRM}	—	10	100	μA	$R_{CK} = 1K, V_{DRM} = \text{Rating}$
Reverse Current	I_{RRM}	—	30	100	μA	$R_{GK} = 1K, V_{RRM} = \text{Rating}$
Gate Trigger Voltage	V_{GT}	0.15	0.2	—	V	$R_{GS} = 100\Omega, V_D = 5V$
Holding Current	I_{HT}	0.2	0.4	1.5	mA	$R_{CK} = 1K$

Note: Blocking voltage ratings apply over the full operating temperature range, provided the gate is connected to the cathode through a resistor, 1000 ohms or smaller, or other adequate bias is used.

