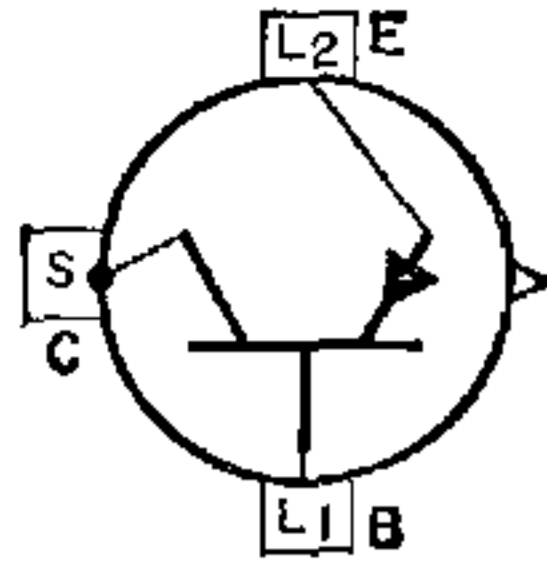


POWER TRANSISTOR



Germanium p-n-p type used in a wide variety of switching and amplifier applications in industrial and military equipment requiring transistors having high voltage, current, and dissipation values. It is used in

2N173

power-switching, voltage- and current-regulating, dc-to-dc converter, inverter, power-supply, and relay- and solenoid-actuating circuits; and in low-frequency oscillator and audio-amplifier service. This type is designed to provide satisfactory performance under extreme environmental conditions of temperature, moisture, and altitude; it is stud-mounted to provide positive heat-sink contact, and has a cold-weld seal to insure reliable performance under severe environmental conditions. JEDEC No. TO-36 package; outline 14, Outlines Section.

MAXIMUM RATINGS

Collector-to-Base Voltage (with emitter-to-base volts = -1.5) ..	-60 max	volts
Emitter-to-Base Voltage (with collector open)	-40 max	volts
Collector Current	-15 max	amperes
Emitter Current	15 max	amperes
Base Current	-4 max	amperes
Transistor Dissipation:		
At case temperatures up to 25°C	150 max	watts
At case temperatures above 25°C	See curve	page 80
Case-Temperature Range:		
Operating and storage	-65 to 100	°C

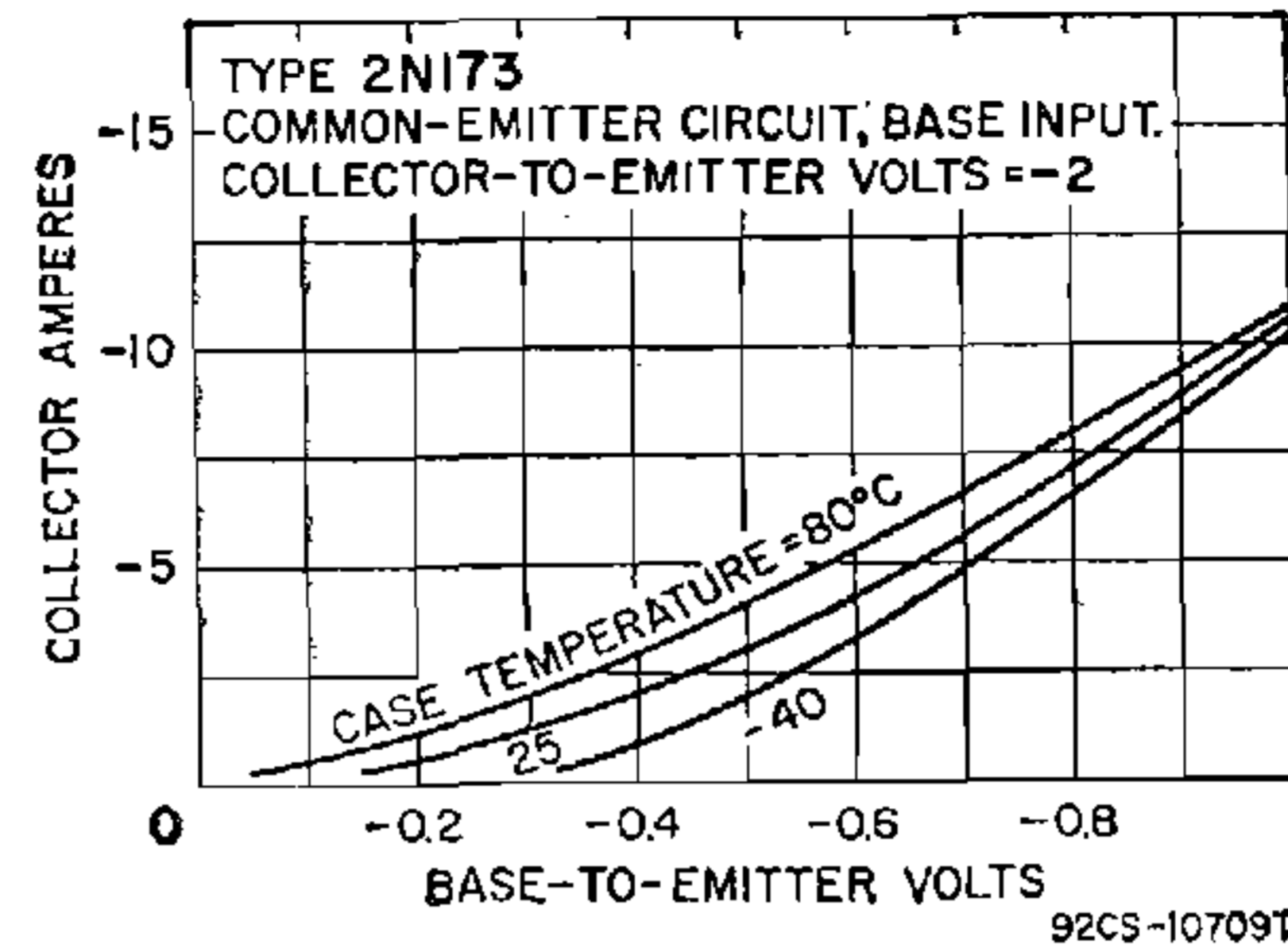
CHARACTERISTICS

Collector-to-Emitter Breakdown Voltage:		
With base short-circuited to emitter and collector amperes = 0.3	-50 min	volts
With base open and collector amperes = 0.3	-50	volts
With base open and collector amperes = -1	-45 min	volts
Base-to-Emitter Voltage (with collector-to-emitter volts = -2 and collector amperes = -5)	-0.65	volt
Emitter-to-Base Voltage (with collector-to-base volts = -80 and emitter current = 0)	-0.15	volt
Collector-to-Emitter Saturation Voltage (with collector amperes = -12 and base amperes = -2)	-0.3	volt
Collector-to-Emitter Reach-Through Voltage	-60 min	volts
Emitter-Cutoff Current (with emitter-to-base volts = -40 and collector current = 0)	-1	ma
Collector-Cutoff Current:		
With collector-to-base volts = -2 and emitter current = 0 ..	-100	µa
With collector-to-base volts = -60 and emitter current = 0 ..	-2	ma
Thermal Resistance (junction-to-case)	0.35	°C/watt
Thermal Capacity (for pulses in the 1-to-10-millisecond range) ..	0.075	watt-sec/°C
Thermal Time Constant	26.25	msec

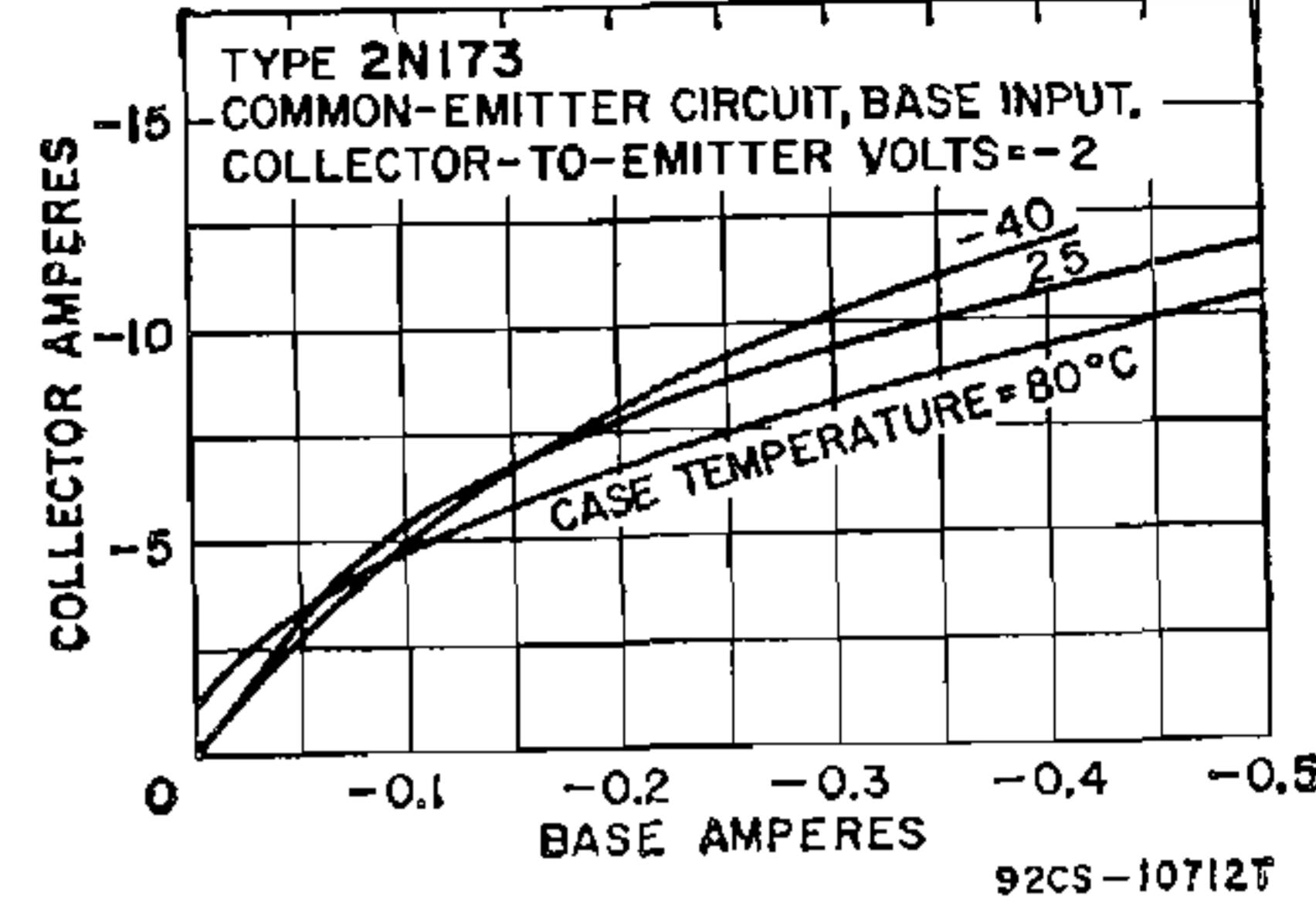
In Common-Emitter Circuit

DC Forward Current-Transfer Ratio (with collector-to-emitter volts = -2):		
With collector amperes = -5	35 to 70	
With collector amperes = -12	25	
Small-Signal Forward-Current-Transfer-Ratio Cutoff		
Frequency (with collector-to-emitter volts = -6 and collector amperes = -5)	10	kc

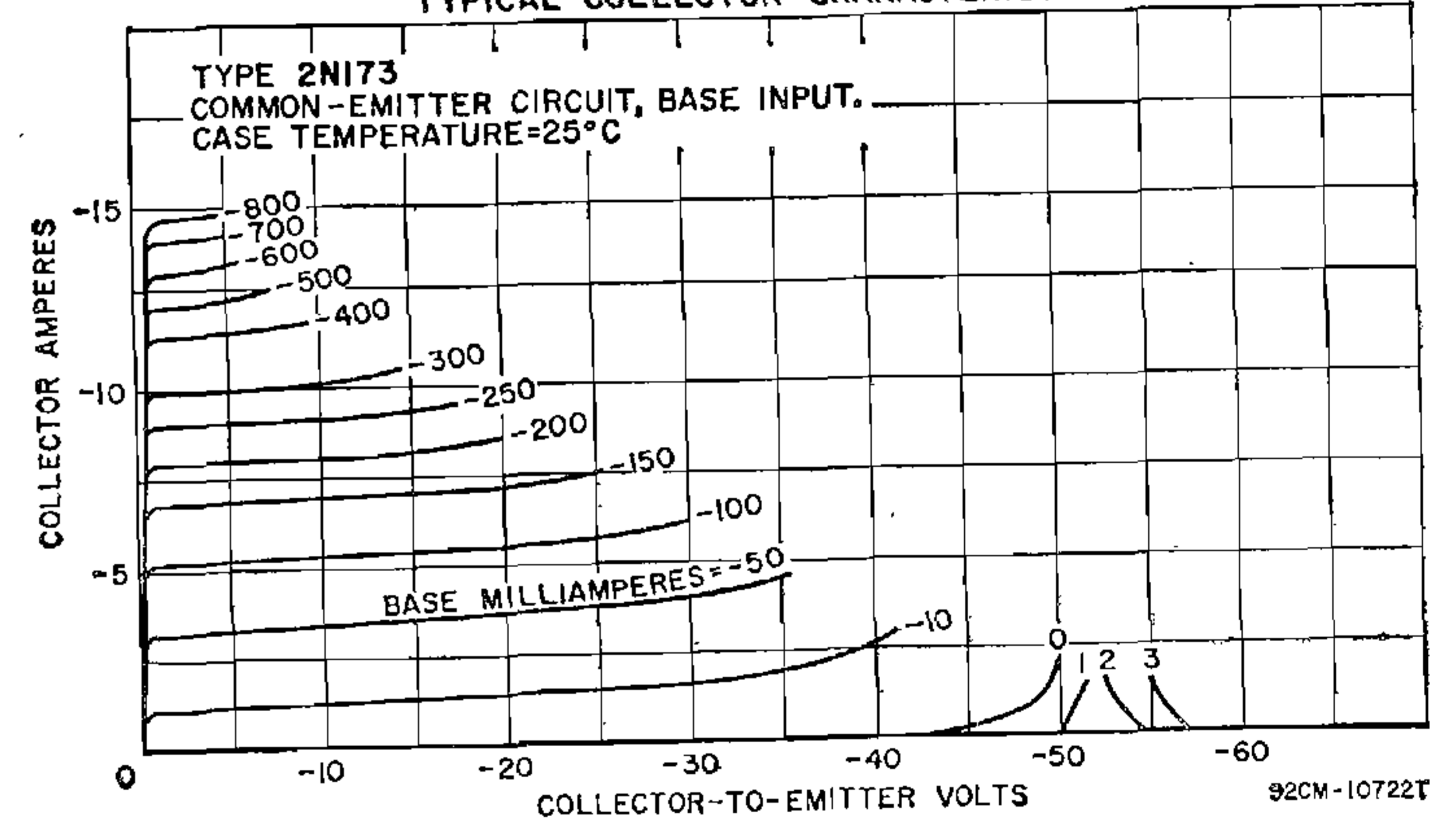
TYPICAL TRANSFER CHARACTERISTICS



TYPICAL TRANSFER CHARACTERISTICS



TYPICAL COLLECTOR CHARACTERISTICS



TYPICAL OPERATION IN POWER-SWITCHING CIRCUIT

DC Collector Supply Voltage	-12	volts
DC Base Supply Voltage	6	volts
On DC Collector Current	-12	amperes
Turn-On DC Base Current	-2	amperes
Turn-Off DC Base Current	0	amperes
Switching Time:		
Rise time	15	µsec
Fall time	15	µsec