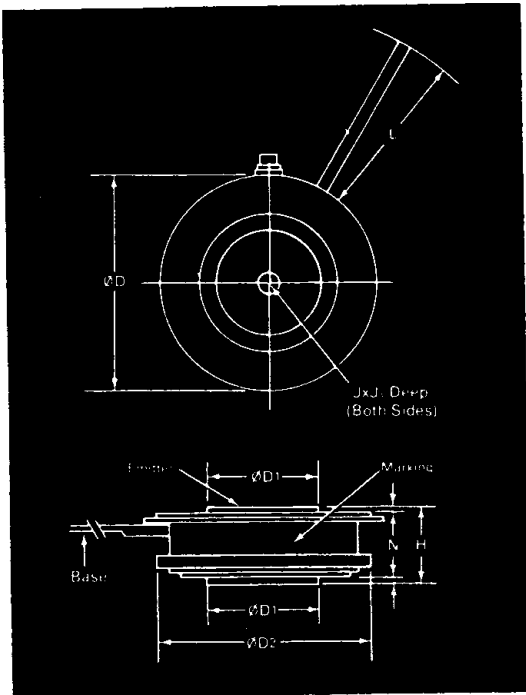


Data sheet of NPN Power Switching Transistor D62T



NPN Power Switching TRANSISTORS D62T

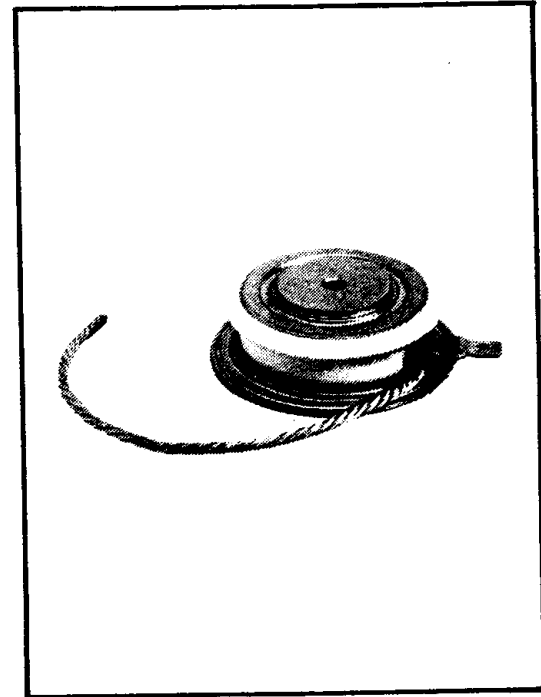
200 Amperes
400—500 Volts



D62 Outline

Symbol	Inches		Millimeters	
	Min.	Max.	Min.	Max.
ϕD	1.610	1.650	40.89	41.91
ϕD_1	.745	.755	18.92	19.18
ϕD_2	1.420	1.460	36.07	37.08
H	.500	.560	12.70	14.22
ϕJ	.135	.145	3.43	3.68
J_1	.072	.082	1.83	2.08
L	4.000		101.6	
N	.030		.76	

Creep Distance—.34 in. min. (8.64mm)
Strike Distance—.52 in. min. (13.21mm)
(In accordance with NEMA standards.)
Finish—Nickel Plate.
Approx. Weight—2.1 oz. (60 g).
1. Dimension "H" is a clamped dimension.
2. "Base Lead is No. 14 uninsulated
flexible stranded wire.



Data sheet of NPN Power Switching Transistor D62T

Maximum Ratings

Collector Current (peak): 200 Amperes
 Collector Current (continuous): 200 Amperes
 Base Current (continuous): 20 Amperes
 Power Dissipation: 1100 Watts at $T_c = 75^\circ\text{C}$
 Operating and Storage Temperature: -65°C to 200°C

Applications

- High Frequency Inverters
- Motor Controls
- Switching Regulators
- VLF Transmitters
- Induction Heating Power Supplies

Features

- Triple Diffused Design
- CBE Construction
- Double Sided Cooling
- Fast Switching

Ordering Information

Type	V _{CEO} (SUS) (Volts)	Current Rating - Amperes			Gain
		40	50	60	
D62T	400	4040	4050	4060	10
	450	4540	4550	4560	10
	500	5040			10

Example: Select the complete ten digit device part number you desire from the shaded area in the table above — i.e. a D62T454010 Describes a Disc Package Transistor rated at 450 Volts, 40 Amperes, and a gain of 10 at rated current (40 Amperes).

Data sheet of NPN Power Switching Transistor D62T

Electrical and Mechanical Characteristics (TCASE = 25°C unless otherwise specified)

Symbol	Characteristic	Test Conditions	Min.	Typ.	Max.	Units
V _{CEO} (SUS)	Collector-Emitter Sustaining Voltage	I _C = 200mA I _B = 0 Note 1	See Ordering Information on Previous Page			Volts
I _{CEV}	Collector Cutoff Current (Base Emitter Reverse Biased)	At Rated V _{CEO} (SUS) = 50V V _{BE} (OFF) = -1.5V		0.1	1	mA
I _{CEV}	Collector Cutoff Current (Base Emitter Reverse Biased)	At Rated V _{CEO} (SUS) = 50V V _{BE} (OFF) = -1.5V, T _C = 150°C		0.8	3	mA
I _{EBO}	Emitter Cutoff Current	V _{EB} = 7V		2	30	mA
h _{FE}	DC Current Gain	I _C = Gain Rated ; V _{CE} = 2.5V	10	15		
h _{FE}	DC Current Gain D62TXX40	I _C = 80A, V _{CE} = 2.5V		5		
h _{FE}	DC Current Gain D62T---50	I _C = 100A, V _{CE} = 2.5V		5		
h _{FE}	DC Current Gain D62T - -60	I _C = 120A, V _{CE} = 2.5V		5		
V _{CE} (SAT)	Collector-Emitter Saturation Voltage	I _C = Gain Rated ; I _C /I _B = 8.33		75	1.25	Volts
V _{BE} (SAT)	Base-Emitter Saturation Voltage	I _C /I _B = 8.33 D62T_40 D62T_50 D62T_60		1.0 1.15 1.30	1.40 1.50 1.60	Volts

Data sheet of NPN Power Switching Transistor D62T

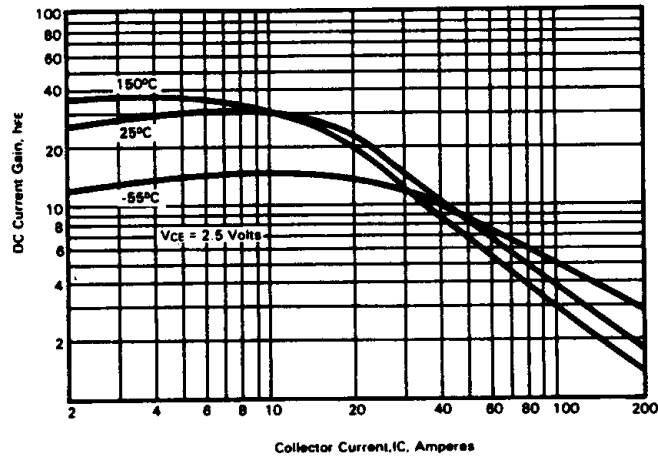
t_d	Turn-On Delay	Resistive Load Switch Times	VCC = 250V, IC = 40A IB1 = IB2 = 6A tp = 50 us Duty Cycle \leq 2% D62T—40			110	ns	
t_r	Rise Time					0.7	1.0	μ s
t_s	Storage Time					1.25	3.0	μ s
t_f	Fall Time					0.3	0.5	μ s
t_d	Turn-On Delay	Resistive Load Switch Times	VCC = 250V, IC = 50A IB1 = IB2 = 7.5A tp = 50 us Duty Cycle \leq 2% D62T—50			120	ns	
t_r	Rise Time					0.8	1.10	μ s
t_s	Storage Time					1.75	3.0	μ s
t_f	Fall Time					0.32	0.5	μ s
t_d	Turn-On Delay	Resistive Load Switch Times	VCC = 250V, IC = 60A IB1 = IB2 = 9A tp = 50 us Duty Cycle \leq 2% D62T—60			150	ns	
t_r	Rise Time					0.85	1.20	μ s
t_s	Storage Time					2.0	3.0	μ s
t_f	Fall Time					0.35	0.5	μ s
COB	Output Capacitance	fTEST = 1 MHz, VCB = 10V				2500	μ mf	
f_T	Gain-Bandwidth Product	fTEST = 1 MHz, IC = 5A, VCE = 10V		7	10		MHZ	
R θ JC	Thermal Resistance Junction to Case Double Sided Cooling	VCE = 20V				0.09	$^{\circ}$ C/W	
R θ CS	Thermal Resistance Case to Sink Double Sided Cooling	VCE = 20V Lubricated				0.05	$^{\circ}$ C/W	
	Mounting Force			900		1100	lb.	
				4.05		4.95	KN	

1. VCE0 (SUS) must not be measured on a curve tracer.

Data sheet of NPN Power Switching Transistor D62T

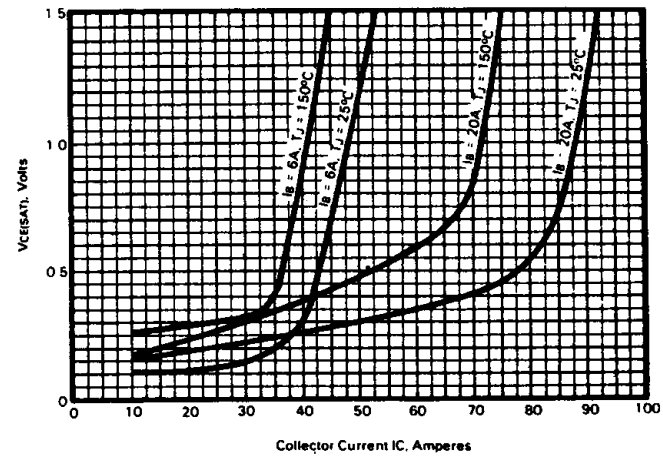
D62T_40

Typical DC Current Gain



D62T_40

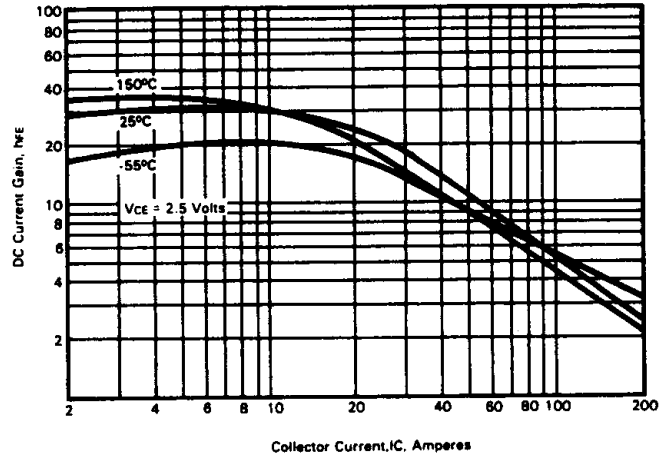
Typical Collector-emitter Saturation Voltage



Data sheet of NPN Power Switching Transistor D62T

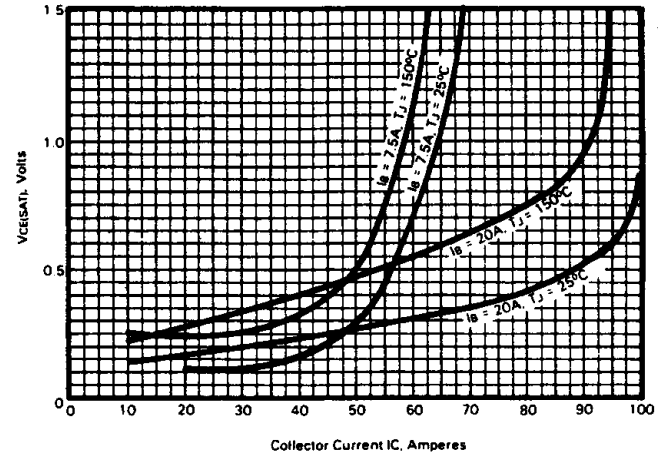
D62T_50

Typical DC Current Gain



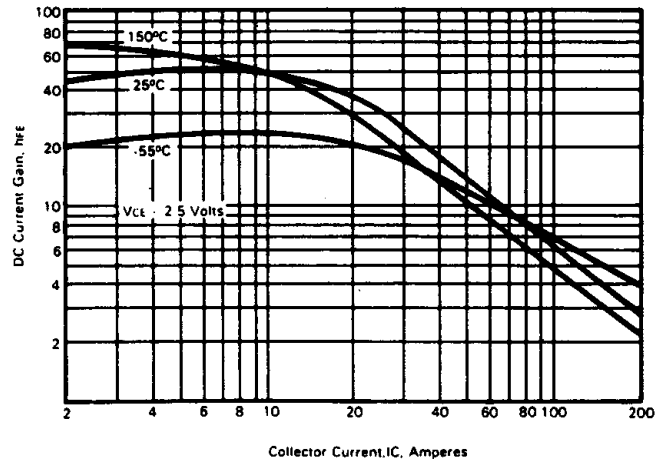
D62T_50

Typical Collector-emitter Saturation Voltage



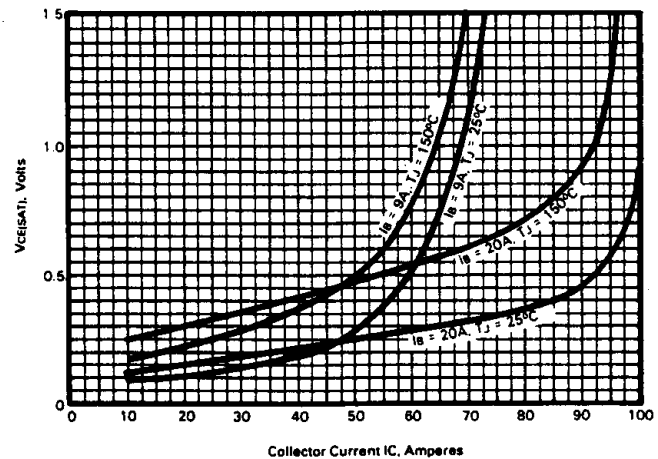
D62T_60

Typical DC Current Gain



D62T_60

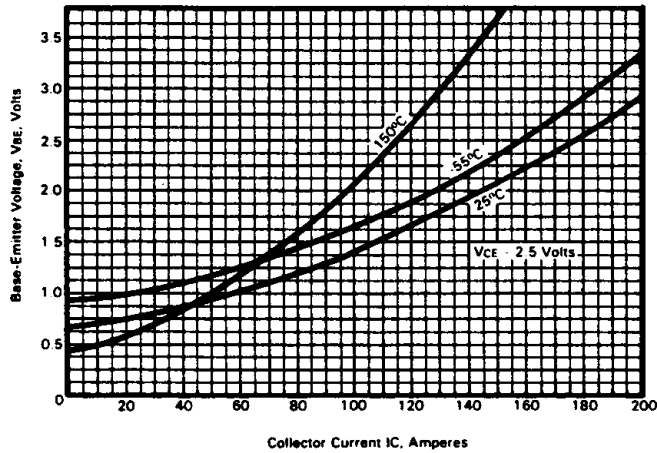
Typical Collector-emitter Saturation Voltage



Data sheet of NPN Power Switching Transistor D62T

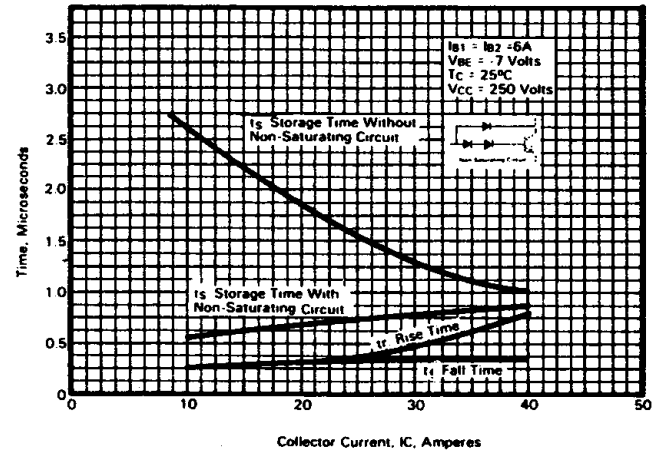
D62T_40

Typical Transfer Characteristics



D62T_40

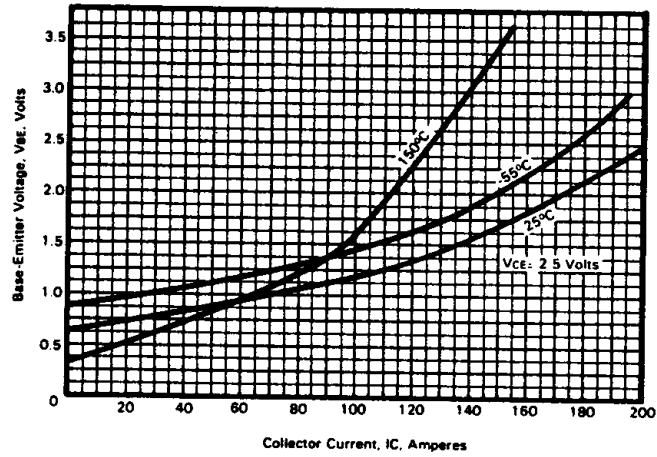
Typical Resistive Switching Times



Data sheet of NPN Power Switching Transistor D62T

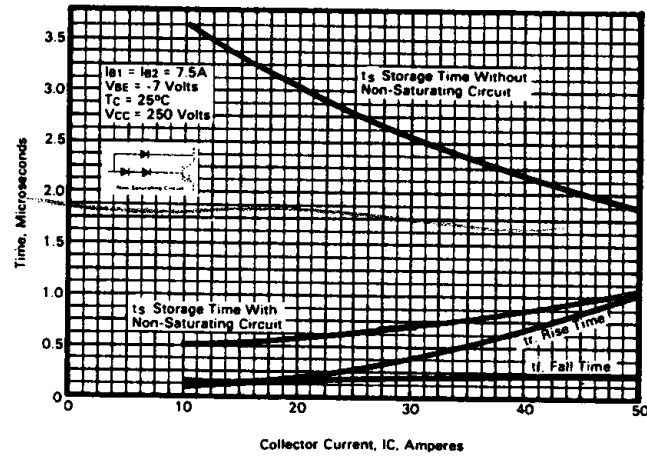
D62T_50

Typical Transfer Characteristics



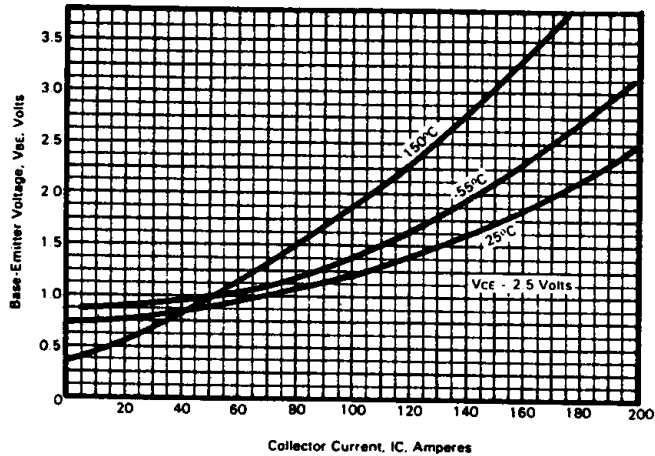
D62T_50

Typical Resistive Switching Times



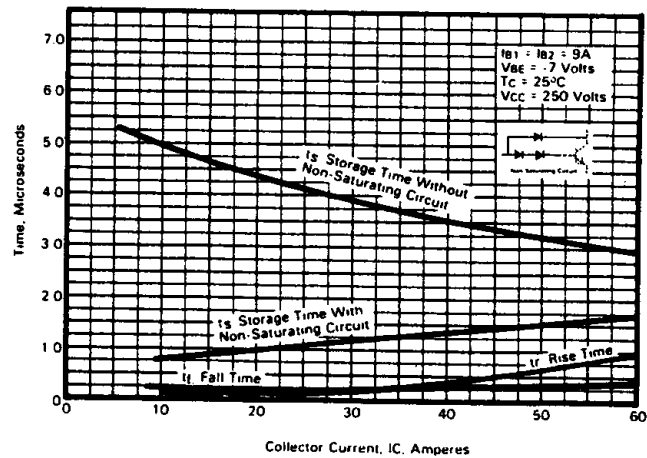
D62T_60

Typical Transfer Characteristics



D62T_60

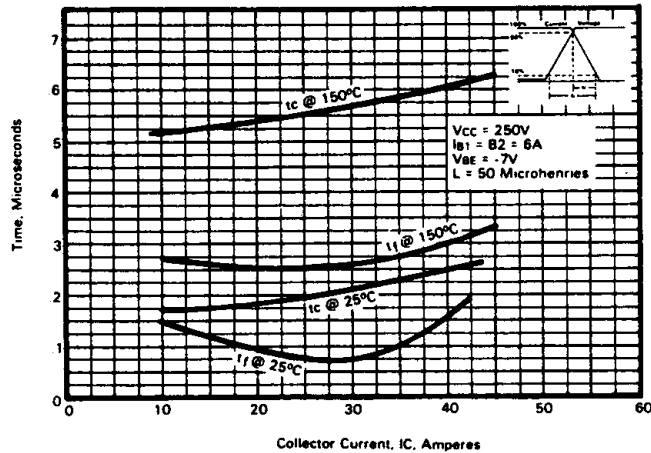
Typical Resistive Switching Times



Data sheet of NPN Power Switching Transistor D62T

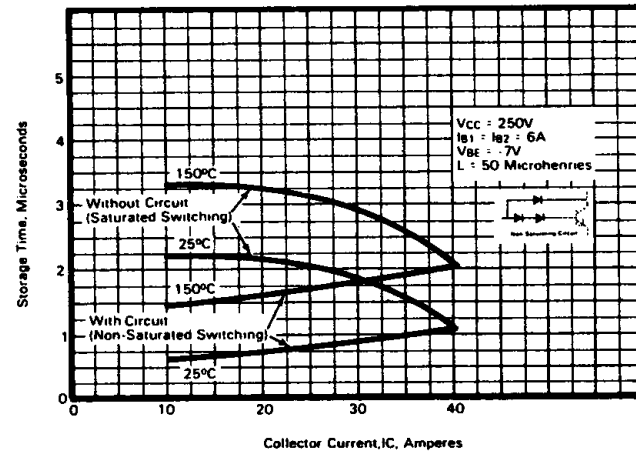
D62T_40

Typical Turn-Off Time For Clamped Inductive Switching



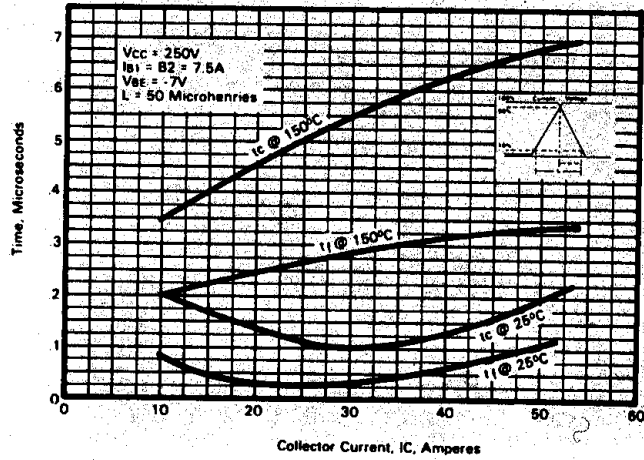
D62T_40

Typical Storage Time For Clamped Inductive Switching

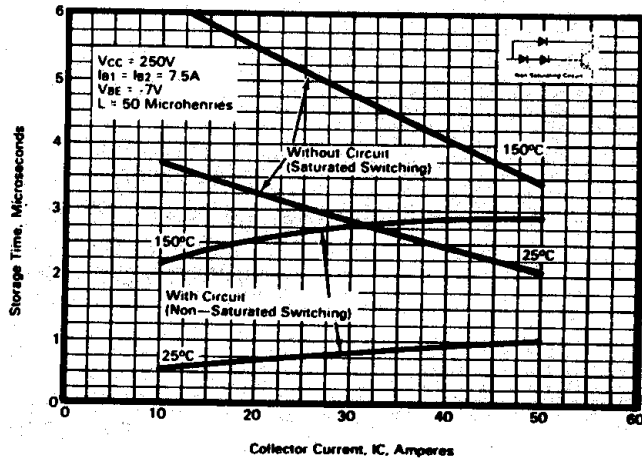


Data sheet of NPN Power Switching Transistor D62T

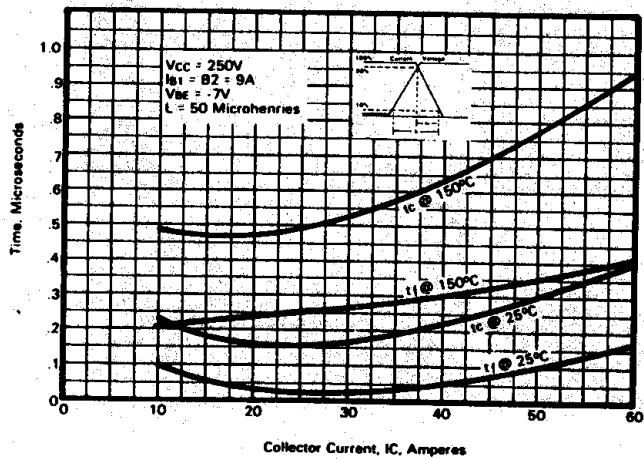
D62T_50 Typical Turn—Off Time For Clamped Inductive Switching



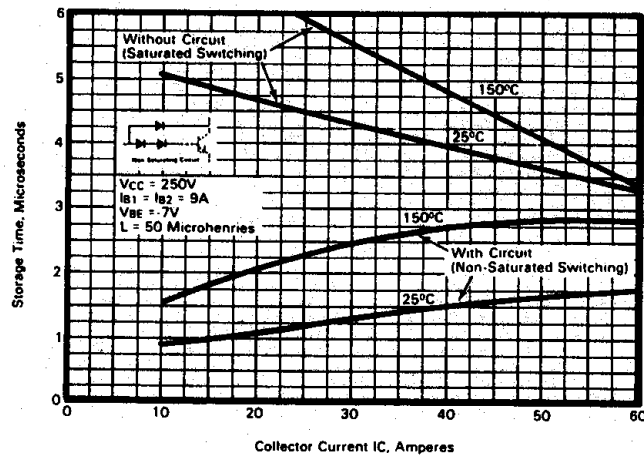
D62T_50 Typical Storage Time For Clamped Inductive Switching



D62T_60 Typical Turn-Off time For Clamped Inductive Switching



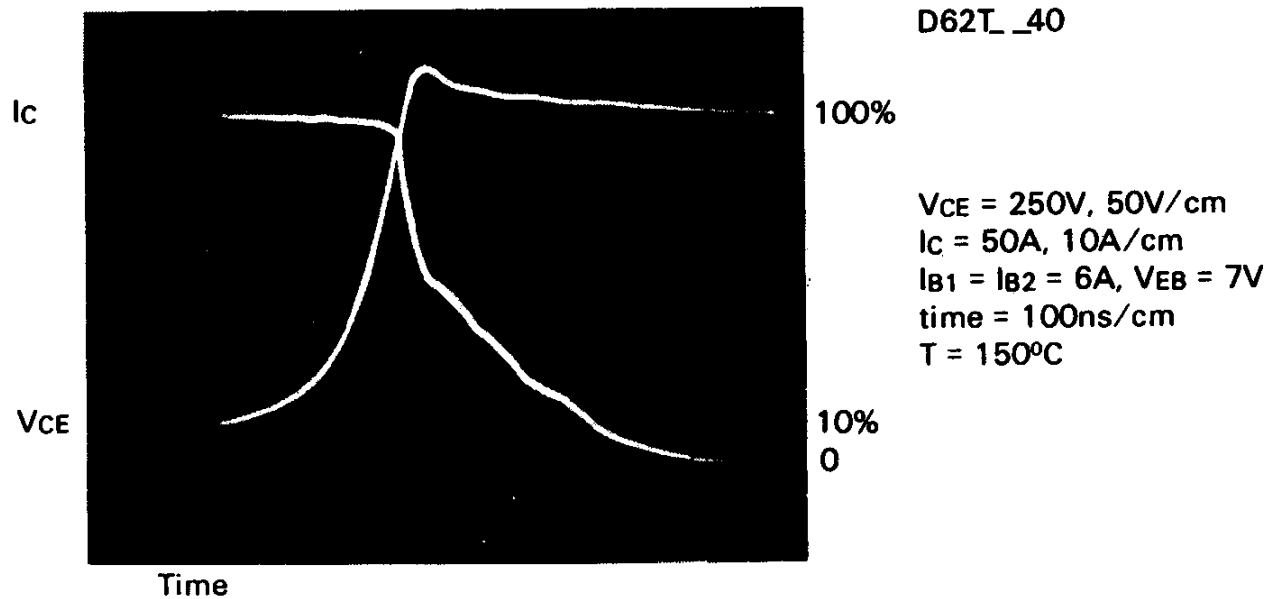
D62T_60 Typical Storage Time For Clamped Inductive Switching



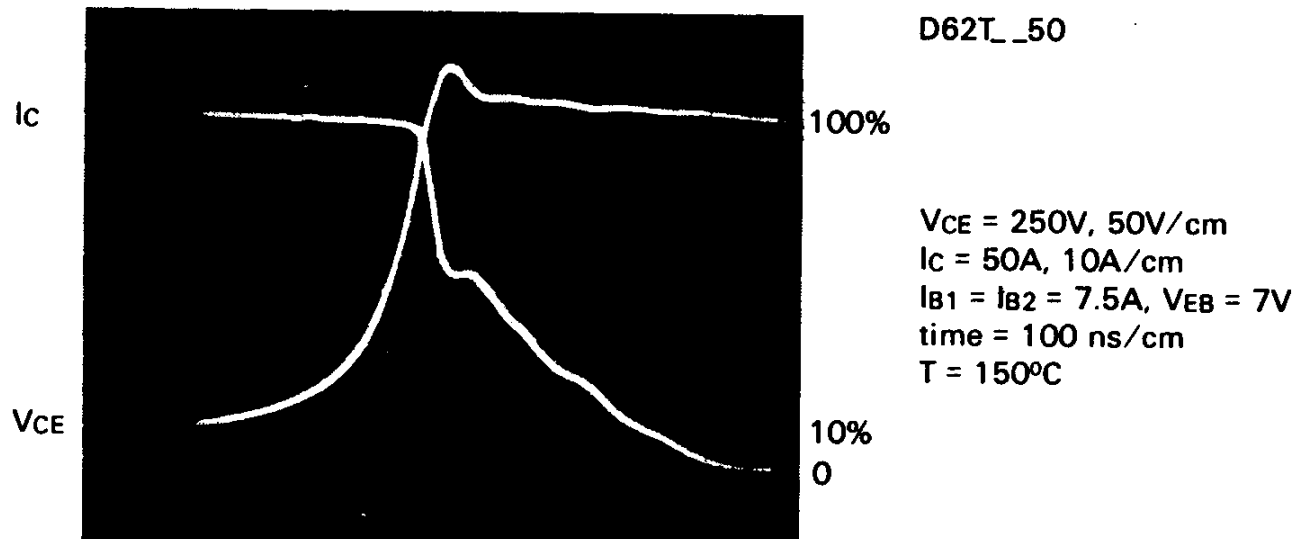
Data sheet of NPN Power Switching Transistor D62T

TYPICAL TURN-OFF WAVE FORMS FOR CLAMPED INDUCTIVE SWITCHING*

* Shown below are actual photographs taken during 150°C inductive switching measurements

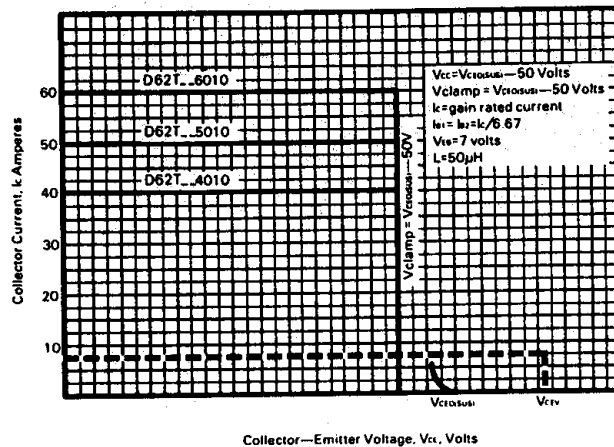


Data sheet of NPN Power Switching Transistor D62T



Data sheet of NPN Power Switching Transistor D62T

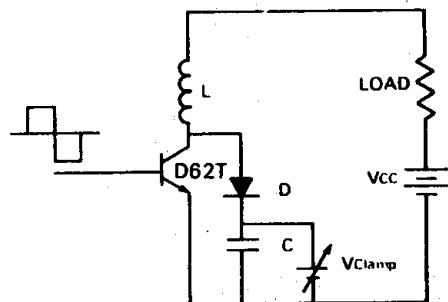
Reverse Bias Safe Switching Area



INDUCTIVE TURN-OFF CAPABILITY

All D62T transistors are tested in the clamped inductive circuit shown. This test is assurance that every D62T transistor is capable of switching clamped inductive loads traversing the load line as shown on the Reverse Bias Safe Switching graph.

The dotted line on the Safe Switching Area is an additional test that can be done on all transistors. Consult the factory for this special test.



Data sheet of NPN Power Switching Transistor D62T

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