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Ordering number : EN686K

2SD1060

SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

2SD1060 NPNEpitaxialPlanarSiliconTransistor

50V / 5A Switching Applications

Applications

- Suitable for relay drivers, high-speed inverters, converters, and other general large-current switching

Features

- Low collector-to-emitter saturation voltage : VCE(sat)=0.3V max / IC=3A, IB= 0.3A

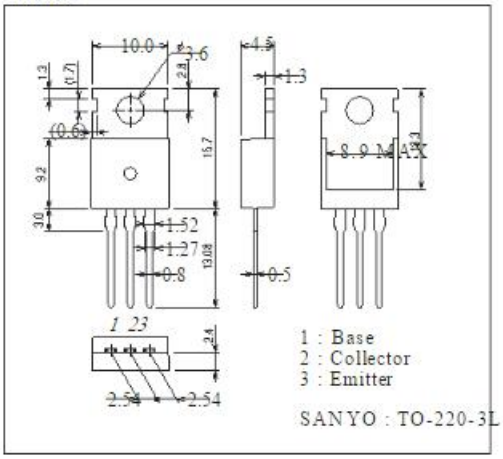
Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	VCBO		60	V
Collector-to-Emitter Voltage	VCEO		50	V
Emitter-to-Base Voltage	VEBO		6	V
Collector Current	IC		5	A
Collector Current (Pulse)	ICP		9	A
Collector Dissipation	PC		1.75	W
		Tc=25°C	30	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		--55 to +150	°C

Package Dimensions

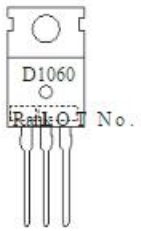
unit : mm (typ)
7536-002



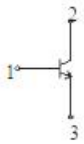
Product & Package Information

- Package : TO-220-3L
- JEITA, JEDEC : SC-46, TO-220AB
- Minimum Packing Quantity : 50 pcs./magazine

Marking



Electrical Connection



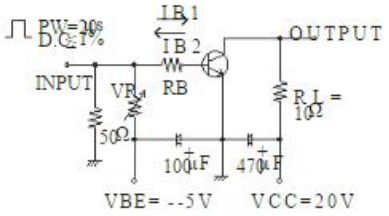
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	VCB=40V, IE=0A			0.1	mA
Emitter Cutoff Current	IEBO	VEB=4V, IC=0A			0.1	mA
DC Current Gain	hFE1	VCE=2V, IC=1A	100*		280*	
	hFE2	VCE=2V, IC=2A	80			
Gain-Bandwidth Product	fT	VCE=5V, IC=1A		30		MHz
Output Capacitance	Cob	VCB=10V, f=1MHz		100		pF
Collector-to-Emitter Saturation Voltage	VCE(sat)	IC=3A, IB=0.3A			0.3	V
Collector-to-Base Breakdown Voltage	V(BR)CBO	IC=1mA, IE=0A	60			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	IC=1mA, RBE=∞	50			V
Emitter-to-Base Breakdown Voltage	V(BR)EBO	IE=1mA, IC=0A	6			V
Turn-On Time	ton	See specified Test Circuit		0.1		μs
Storage Time	tstg			1.4		μs
Fall Time	tf			0.2		μs

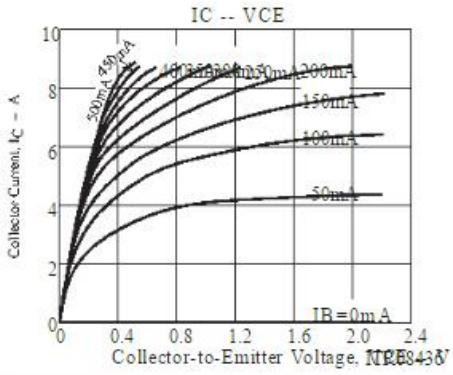
* : The 2SD1060 is classified by 1A hFE as follows

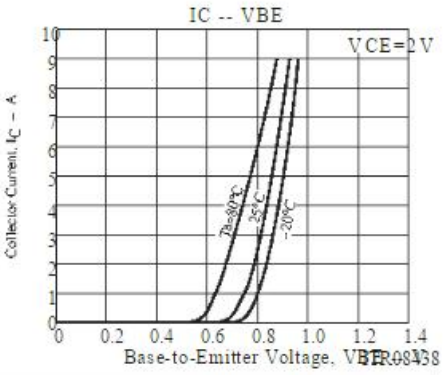
Rank	R	S
hFE	100 to 200	140 to 280

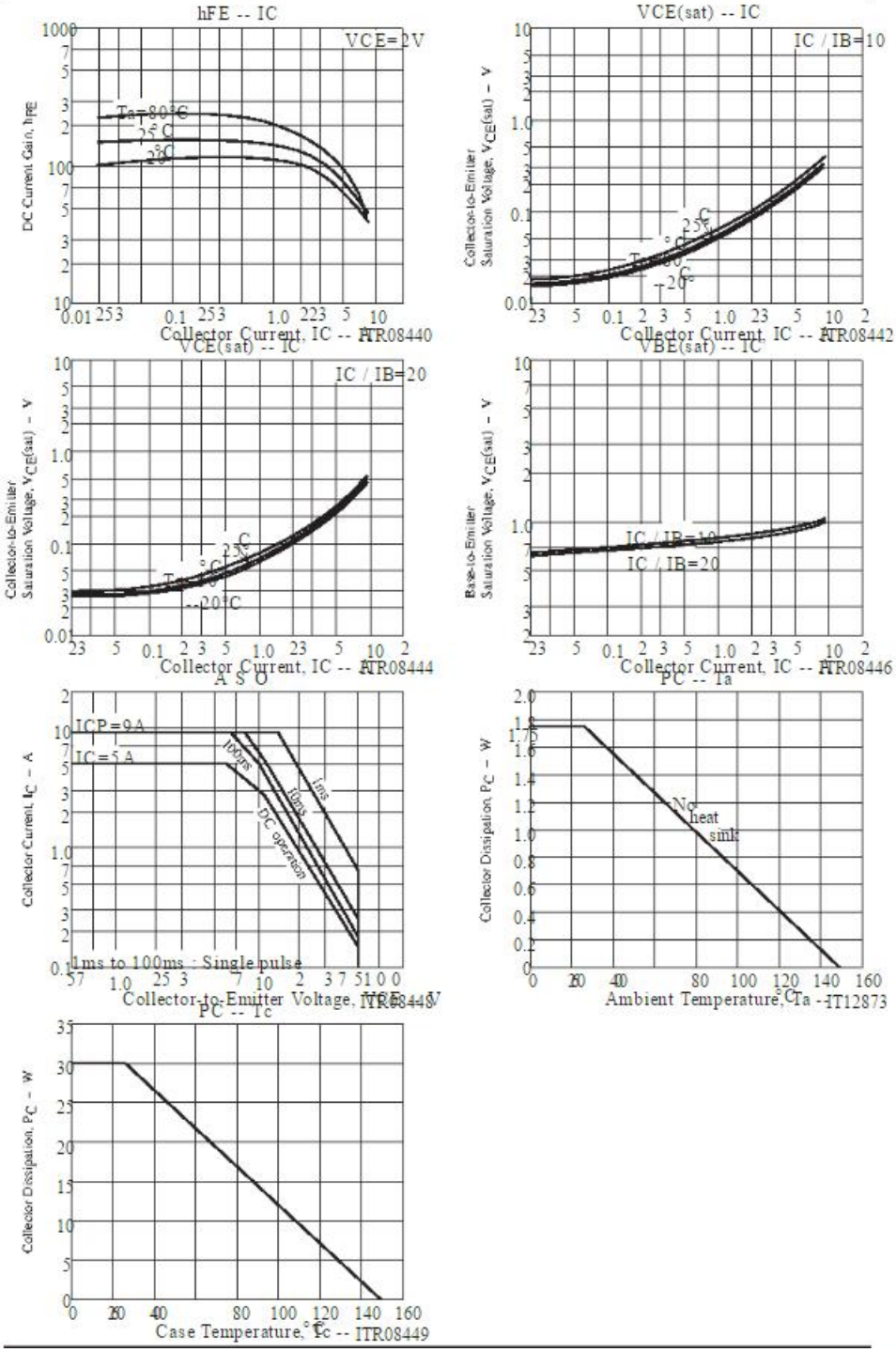
Switching Time Test Circuit



IC=10IB1=--10IB2=2A






hFE -- IC
VCE=2V
Ta=80°C
25°C
-20°C
DC Current Gain, hFE
Collector Current, IC -- ITR08440
VCE(sat) -- IC
IC / IB=10
Collector-to-Emitter Saturation Voltage, VCE(sat) -- V
Collector Current, IC -- ITR08442
VCE(sat) -- IC
IC / IB=20
Collector-to-Emitter Saturation Voltage, VCE(sat) -- V
Collector Current, IC -- ITR08444
VBE(sat) -- IC
IC / IB=10
IC / IB=20
Base-to-Emitter Saturation Voltage, VCE(sat) -- V
Collector Current, IC -- ITR08446
A S O
ICP=9A
IC=5A
100ms
1ms
10ms
DC operation
1ms to 100ms : Single pulse
Collector Current, IC -- A
Collector-to-Emitter Voltage, VCE -- V
ITR08448
PC -- Ta
No heat sink
Collector Dissipation, PC -- W
Ambient Temperature, Ta -- °C
IT12873
PC -- Tc
Collector Dissipation, PC -- W
Case Temperature, Tc -- °C
ITR08449

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