

isc Silicon PNP Power Transistor

2SA1646

DESCRIPTION

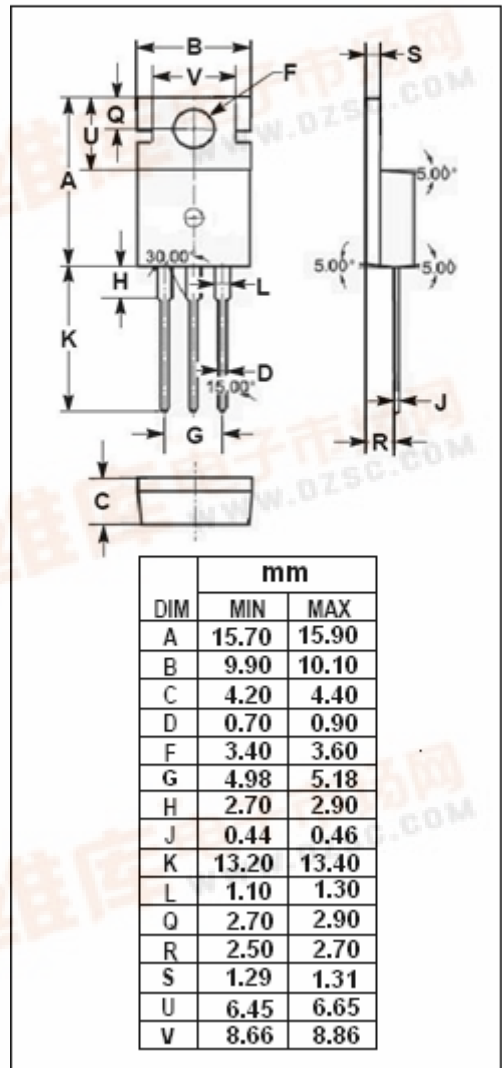
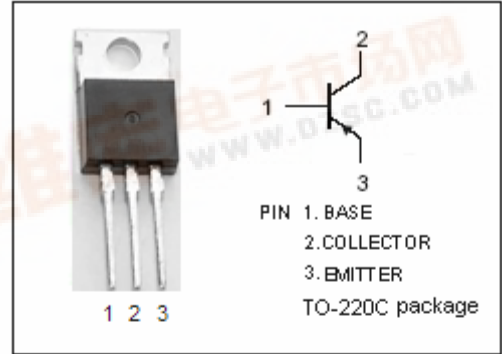
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = -100V(\text{Min})$
- Fast Switching Speed
- Low Saturation Voltage-
: $V_{CE(sat)} = -0.3V(\text{Max}) @ I_C = -6A$

APPLICATIONS

- This type of power transistor is developed for high-speed switching and features a very low $V_{CE(sat)}$, is ideal for use in switching power supplies, DC/DC converters, motor drivers, solenoid drivers, and other low-voltage power supply devices, as well as for high current switching.

ABSOLUTE MAXIMUM RATINGS($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	-150	V
V_{CEO}	Collector-Emitter Voltage	-100	V
V_{EBO}	Emitter-Base Voltage	-7.0	V
I_C	Collector Current-Continuous	-10	A
I_{CM}	Collector Current-Pulse	-20	A
I_B	Base Current-Continuous	-6	A
P_T	Total Power Dissipation @ $T_C=25^\circ\text{C}$	40	W
	Total Power Dissipation @ $T_a=25^\circ\text{C}$	1.5	
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55~150	$^\circ\text{C}$



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ELECTRICAL CHARACTERISTICS

T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CE(sat)-1}	Collector-Emitter Saturation Voltage	I _C = -6A; I _B = -0.3A			-0.3	V
V _{CE(sat)-2}	Collector-Emitter Saturation Voltage	I _C = -8A; I _B = -0.4A			-0.5	V
V _{BE(sat)-1}	Base-Emitter Saturation Voltage	I _C = -6A; I _B = -0.3A			-1.2	V
V _{BE(sat)-2}	Base-Emitter Saturation Voltage	I _C = -8A; I _B = -0.4A			-1.5	V
I _{CBO}	Collector Cutoff Current	V _{CB} = -100V; I _E = 0			-10	μ A
I _{EBO}	Emitter Cutoff Current	V _{EB} = -5V; I _C = 0			-10	μ A
h _{FE-1}	DC Current Gain	I _C = -0.5A; V _{CE} = -2V	100			
h _{FE-2}	DC Current Gain	I _C = -2A; V _{CE} = -2V	100		400	
h _{FE-3}	DC Current Gain	I _C = -6A; V _{CE} = -2V	60			
C _{OB}	Output Capacitance	I _E =0; V _{CB} = -10V; f _{test} = 1.0MHz		250		pF
f _T	Current-Gain—Bandwidth Product	I _C = -0.5A; V _{CE} = -10V		150		MHz

Switching times

t _{on}	Turn-on Time	I _C = -6A, R _L = 8.3 Ω, I _{B1} = -I _{B2} = -0.3A, V _{CC} = -50V		0.3		μ s
t _{stg}	Storage Time			1.5		μ s
t _f	Fall Time			0.4		μ s

◆ h_{FE-2} Classifications

M	L	K
100-200	150-300	200-400