

isc Silicon PNP Power Transistor

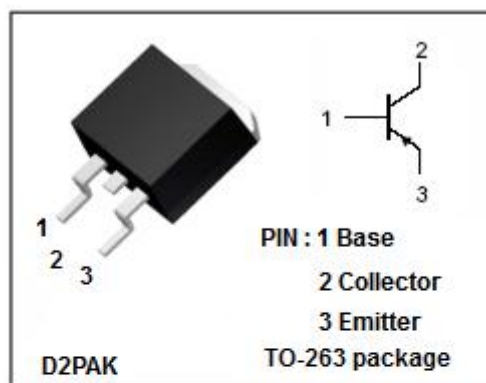
2SA1646-Z

DESCRIPTION

- Fast Switching Speed
- Low Saturation Voltage-
: $V_{CE(sat)} = -0.3V(Max) @ I_C = -6A$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

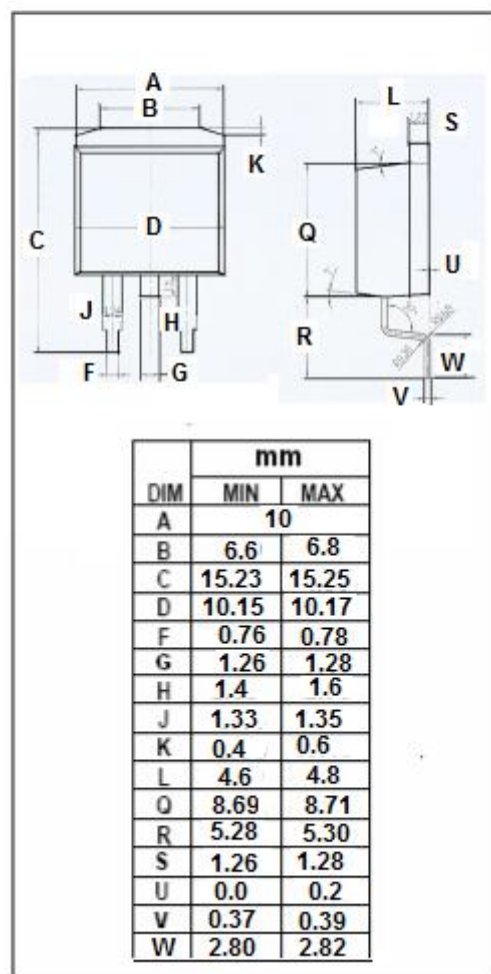
APPLICATIONS

- 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($T_a=25^{\circ}C$)

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 @ $T_C=25^{\circ}C$	40	W
	Total Power Dissipation @ $T_a=25^{\circ}C$	1.5	
T_J	Junction Temperature	150	$^{\circ}C$
T_{stg}	Storage Temperature	-55~150	$^{\circ}C$



isc Silicon PNP Power Transistor
2SA1646-Z
ELECTRICAL CHARACTERISTICS

 T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{CE(sat)-1} ^{NOTE}	Collector-Emitter Saturation Voltage	I _C = -6A; I _B = -0.3A			-0.3	V
V _{CE(sat)-2} ^{NOTE}	Collector-Emitter Saturation Voltage	I _C = -8A; I _B = -0.4A			-0.5	V
V _{BE(sat)-1} ^{NOTE}	Base-Emitter Saturation Voltage	I _C = -6A; I _B = -0.3A			-1.2	V
V _{BE(sat)-2} ^{NOTE}	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} ^{NOTE}	DC Current Gain	I _C = -0.5A ; V _{CE} = -2V	100			
h _{FE-2} ^{NOTE}	DC Current Gain	I _C = -2A ; V _{CE} = -2V	100		400	
h _{FE-3} ^{NOTE}	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		0.1		μ s
t _{stg}	Storage Time			1.0		μ s
t _f	Fall Time			0.1		μ s

NOTE:Pulse test PW≤350us,duty cycle ≤2%

◆ h_{FE-2} Classifications

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

NOTICE:

ISC reserves the rights to make changes of the content herein the datasheet at any time without notification. The information contained herein is presented only as a guide for the applications of our products.

ISC products are intended for usage in general electronic equipment. The products are not designed for use in equipment which require specialized quality and/or reliability, or in equipment which could have applications in hazardous environments, aerospace industry, or medical field. Please contact us if you intend our products to be used in these special applications.

ISC makes no warranty or guarantee regarding the suitability of its products for any particular purpose, nor does ISC assume any liability arising from the application or use of any products, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages.