

isc Silicon NPN Power Transistors

BUS12/A

DESCRIPTION

- High Switching Speed
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)} = 400V$  (Min)-BUS12  
450V (Min)-BUS12A

APPLICATIONS

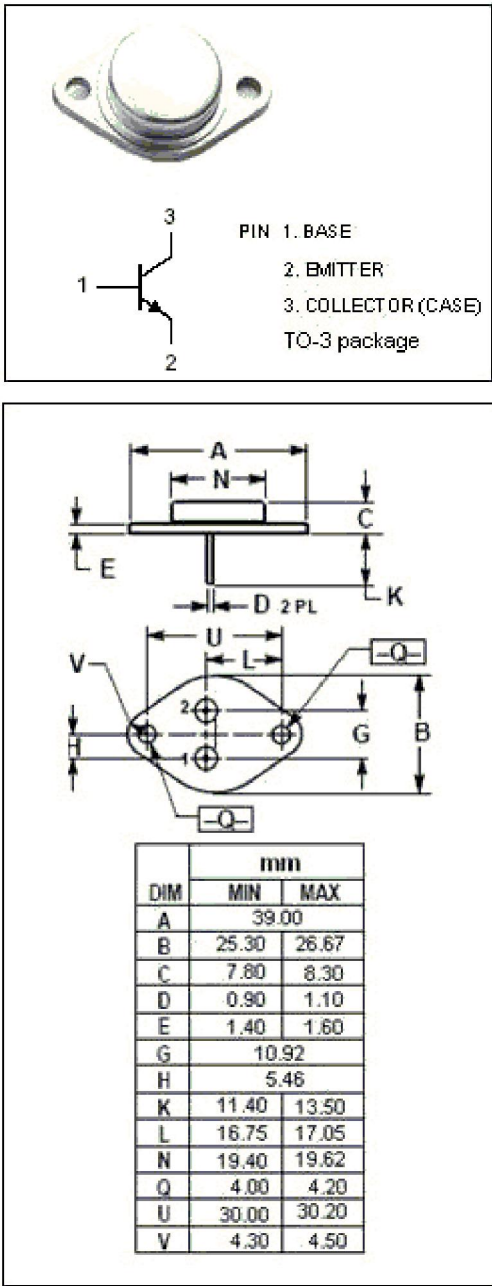
- Designed for use in converters, inverters, switching regulators, motor control systems etc.

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

SYMBOL	PARAMETER		MAX	UNIT
$V_{CES}$	Collector- Emitter Voltage( $V_{BE}=0$ )	BUS12	850	V
		BUS12A	1000	
$V_{CEO}$	Collector-Emitter Voltage	BUS12	400	V
		BUS12A	450	
$V_{EBO}$	Emitter-Base Voltage		9	V
$I_C$	Collector Current-Continuous		8	A
$I_{CM}$	Collector Current-Peak $t_p < 2ms$		20	A
$I_B$	Base Current-Continuous		4	A
$I_{BM}$	Base Current-Peak $t_p < 2ms$		6	A
$P_C$	Collector Power Dissipation @ $T_C=25^{\circ}C$		125	W
$T_j$	Junction Temperature		200	$^{\circ}C$
$T_{stg}$	Storage Temperature Range		-65~200	$^{\circ}C$

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j-c}$	Thermal Resistance, Junction to Case	1.4	$^{\circ}C/W$



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## ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{CEO(SUS)}$	Collector-Emitter Sustaining Voltage	BUS12	$I_C=0.1\text{A}; I_B=0; L=25\text{mH}$	400			V
		BUS12A		450			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	BUS12	$I_C=6\text{A}; I_B=1.2\text{A}$			1.5	V
		BUS12A	$I_C=5\text{A}; I_B=1\text{A}$			1.5	
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	BUS12	$I_C=6\text{A}; I_B=1.2\text{A}$			1.5	V
		BUS12A	$I_C=5\text{A}; I_B=1\text{A}$			1.5	
$I_{CES}$	Collector Cutoff Current		$V_{CE}=V_{CESMmax}; V_{BE}=0$ $V_{CE}=V_{CESMmax}; V_{BE}=0; T_J=125^{\circ}\text{C}$			1 3	mA
$I_{EBO}$	Emitter Cutoff Current		$V_{EB}=9\text{V}; I_C=0$			10	mA
$h_{FE}$	DC Current Gain		$I_C=1\text{A}; V_{CE}=5\text{V}$	15		50	

## Switching Times , Resistive Load

$t_{on}$	Turn-On Time	For BUS12 $I_C=6\text{A}; I_{B1}=-I_{B2}=1.2\text{A}$  For BUS12A $I_C=5\text{A}; I_{B1}=-I_{B2}=1\text{A}$			1.0	$\mu\text{s}$
$t_{stg}$	Storage Time				4.0	$\mu\text{s}$
$t_f$	Fall Time				0.8	$\mu\text{s}$