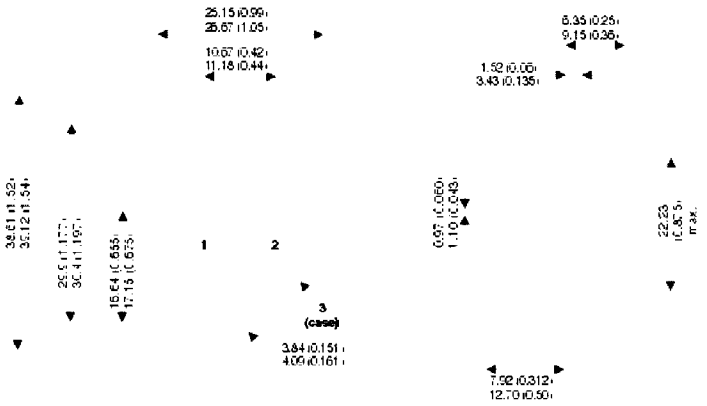
New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

BUX23

NPN MULTI - EPITAXIAL POWER TRANSISTOR



TO–3(TO204AA)

PIN 1 — Base PIN 2 — Emitter Case is Collector

FEATURES

- HIGH CURRENT
- FAST SWITCHING
- HIGH RELIABILITY

APPLICATIONS

- POWER SWITCHING CIRCUITS
- MOTOR CONTROL

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

V_{CBO}	Collector – Base Voltage (I_E = 0)	400V
V_{CEX}	Collector – Emitter Voltage	400V
V_{CEO}	Collector – Emitter Voltage (I_B = 0)	325V
V_{CER}	Collector – Emitter Voltage	390V
V_{EBO}	Emitter – Base Voltage (I_C = 0)	7V
I_C	Collector Current	30A
I_{CM}	Peak Collector Current (t_p = 10 ms)	40A
I_B	Base Current	6A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25$°C	350W
T_{stg}	Storage Temperature	–65 to 200°C
T_j	Junction Temperature	200°C

ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
$V_{CEO(BR)}$*	Collector - Emitter Breakdown Voltage	I_C = 0.2mA		325			V
V_{EBO}	Emitter – BaseVoltage	I_E = 50mA	I_C = 0	7			V
I_{CEO}	Collector Cut-off Current	V_{CE} = 260V	I_B = 0			3	mA
		V_{CE} = 400V	V_{BE} = −1.5V			3	
I_{CEX}	Collector Cut-off Current	V_{CE} = 400V	V_{BE} = −1.5V			12	mA
			T_C = 125°C				
I_{EBO}	Emitter Cut-offCurrent	I_C = 0	V_{EB} = 5V			1.0	mA
$V_{CE(sat)}$*	Collector – EmitterSaturation Voltage	I_C = 8A	I_B = 1.6A		0.2	0.8	V
		I_C = 16A	I_B = 3.2A		0.35	1.0	
$V_{BE(sat)}$*	Base – Emitter Saturation Voltage	I_C = 16A	I_B = 3.2A		1.15	1.5	V
h_{FE}*	DC Current Gain	I_C = 8A	V_{CE} = 4V	15		60	—
		I_C = 16A	V_{CE} = 4V	8			
$I_{S/b}$	Second Breakdown Collector Current	V_{CE} = 140V	t = 1s	0.15			A
		V_{CE} = 16V	t = 1s	22			
f_T	Transition Frequency	I_C = 2A f = 10MHz	V_{CE} = 15V	8			MHz
t_{on}	Turn–On Time	I_C = 16A	I_{B1} =3.2A		0.55	1.3	µs
t_s	Storage Time	I_C = 16A	I_{B1} =3.2A		1.7	2.5	
t_f	Fall Time	I_{B2} = −3.2A			0.26	1.2	

THERMAL CHARACTERISTICS

$R_{th\,J\,C}$	Thermal Resistance Junction to Case	0.5	°C/W

* Pulse test t_p = 300µs , δ = 1.5 %