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

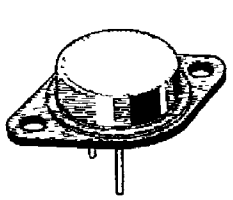
BUW42/42P/42PFI
BUW42A/42AP/42APFI

HIGH VOLTAGE POWER SWITCH

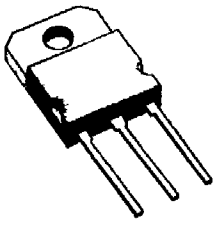
DESCRIPTION

The BUW42/A, BUW42P/42AP and BUW42PFI/APFI are silicon multiepitaxial mesa PNP transistors mounted respectively in TO-3 metal case, TO-218 plastic package and ISOWATT218 fully isolated package.

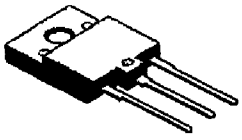
They are intended in fast switching applications for high output power.



TO-3

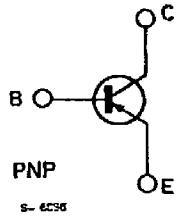


TO-218



ISOWATT218

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	BUW			Unit
		42/P/PFI	42A/AP/APFI		
V_{CES}	Collector-emitter Voltage (V_{BE} = 0)	– 400	– 450		V
V_{CEO}	Collector-emitter Voltage (I_B = 0)	– 350	– 400		V
V_{EBO}	Emitter-base Voltage (I_C = 0)	– 7			V
I_C	Collector Current	– 15			A
I_{CM}	Collector Peak Current	– 30			A
I_B	Base Current	– 10			A
		TO-3	TO-218	ISOWATT218	
P_{tot}	Total Dissipation at T_c < 25°C	150	105	65	W
T_{stg}	Storage Temperature	– 65 to 175	– 65 to 150	– 65 to 150	°C
T_j	Max. Operating Junction Temperature	175	150	150	°C

Quality Semi-Conductors

THERMAL DATA

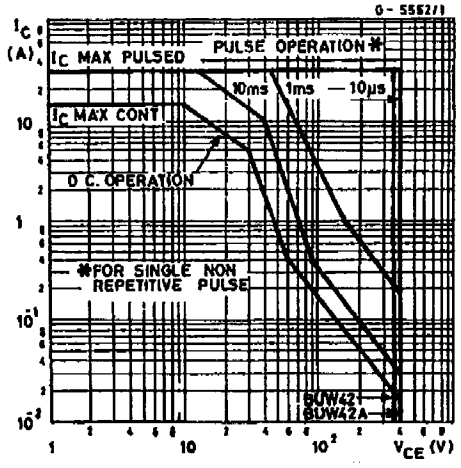
			TO-3	SOT-93	ISOWATT218	Unit
$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	Max	1.2	1.2	1.92	°C/W

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CES}	Collector Cutoff Current (V_{BE} = 0)	V_{CE} = – 400V for **BUW42/P/PFI**			– 1	mA
		V_{CE} = – 450V for **BUW42A/AP/APFI**			– 1	mA
I_{EBO}	Emitter Cutoff Current	V_{EB} = – 5V for **BUW42/P/PFI**			– 1	mA
		V_{EB} = – 7V for **BUW42A/AP/APFI**			– 1	mA
$V_{CEO(sus)}$*	Collector-emitter Sustaining Voltage (I_B = 0)	I_C = – 100mA for **BUW42/P/PFI**	– 350			V
		for **BUW42A/AP/APFI**	– 400			V
$V_{CE(sat)}$*	Collector-emitter Saturation Voltage	I_C = – 10A I_B = – 3A			– 1.5	V
$V_{BE(sat)}$*	Base-emitter Saturation Voltage	I_C = – 10A I_B = – 3A			– 2	V
h_{FE}*	DC Current Gain	I_C = – 3A V_{CE} = – 5V	12		80	
	RESISTIVE LOAD					
t_{on}	Turn-on Time	V_{CC} = – 250V I_C = – 10A		0.3	0.6	µs
t_s	Storage Time	I_{B1} = – I_{B2} = – 3.3A		0.5	1.5	µs
t_f	Fall Time			0.3	0.6	µs

* Pulsed : pulse duration = 300 µs, duty cycle = 1.5 %.

Safe Operating Areas.
(TO-3).



Safe Operating Areas.
(TO-218, ISOWATT218).