

PowerMOS transistor

BUK438-500B

GENERAL DESCRIPTION

N-channel enhancement mode field-effect power transistor in a plastic envelope.
 The device is intended for use in Switched Mode Power Supplies (SMPS), motor control, welding, DC/DC and AC/DC converters, and in general purpose switching applications.

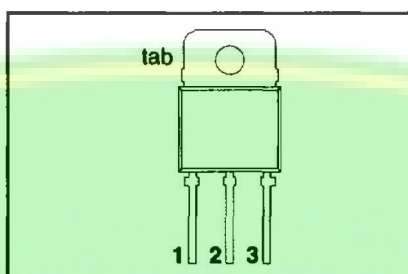
QUICK REFERENCE DATA

SYMBOL	PARAMETER	MAX.	UNIT
V_{DS}	Drain-source voltage	500	V
I_D	Drain current (DC)	13.5	A
P_{tot}	Total power dissipation	220	W
$R_{DS(ON)}$	Drain-source on-state resistance	0.5	Ω

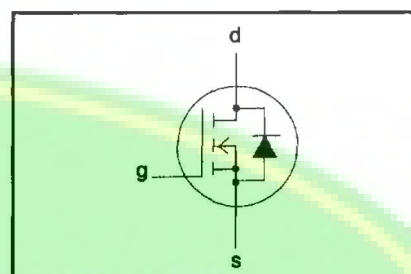
PINNING - SOT93

PIN	DESCRIPTION
1	gate
2	drain
3	source
tab	drain

PIN CONFIGURATION



SYMBOL



LIMITING VALUES

Limiting values in accordance with the Absolute Maximum System (IEC 134)

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
V_{DS}	Drain-source voltage	-	-	500	V
V_{DGR}	Drain-gate voltage	$R_{GS} = 20 \text{ k}\Omega$	-	500	V
$\pm V_{GS}$	Gate-source voltage	-	-	30	V
I_D	Drain current (DC)	$T_{mb} = 25 \text{ }^\circ\text{C}$	-	13.5	A
I_D	Drain current (DC)	$T_{mb} = 100 \text{ }^\circ\text{C}$	-	8.5	A
I_{DM}	Drain current (pulse peak value)	$T_{mb} = 25 \text{ }^\circ\text{C}$	-	54	A
P_{tot}	Total power dissipation	$T_{mb} = 25 \text{ }^\circ\text{C}$	-	220	W
T_{stg}	Storage temperature	-	- 55	150	$^\circ\text{C}$
T_j	Junction Temperature	-	-	150	$^\circ\text{C}$

THERMAL RESISTANCES

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
$R_{th j-mb}$	Thermal resistance junction to mounting base		-	-	0.57	K/W
$R_{th j-a}$	Thermal resistance junction to ambient		-	45	-	K/W