



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
 (973) 748-5089
<http://www.nteinc.com>

BS170 MOSFET N-Ch, Enhancement Mode High Speed Switch TO92 Type Package

Absolute Maximum Ratings:

Drain-Source Voltage, V_{DS} 60V
 Gate-Source Voltage, V_{GS} $\pm 20V$
 Drain Current (Note 1), I_D 500mA
 Total Device Dissipation ($T_A = +25^\circ C$), P_D 350mW
 Operating Junction Temperature Range, T_J -55° to $+150^\circ C$
 Storage Temperature Range, T_{stg} -55° to $+150^\circ C$

Note 1. The Power Dissipation of the package may result in a lower continuous drain current.

Electrical Characteristics: ($T_A = +25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0, I_D = 100\mu A$	60	90	-	V
Gate Reverse Current	I_{GSS}	$V_{GS} = 15V, V_{DS} = 0$	-	0.01	10	nA
ON Characteristics (Note 2)						
Gate Threshold Voltage	$V_{GS(Th)}$	$V_{DS} = V_{GS}, I_D = 1mA$	0.8	2.0	3.0	V
Static Drain-Source ON Resistance	$r_{DS(on)}$	$V_{GS} = 10V, I_D = 200mA$	-	1.8	5.0	Ω
Drain Cutoff Current	$I_{D(off)}$	$V_{DS} = 25V, V_{GS} = 0$	-	-	0.5	μA
Forward Transconductance	g_{fs}	$V_{DS} = 10V, I_D = 250mA$	-	200	-	mmhos
Small-Signal Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 10V, V_{GS} = 0, f = 1MHz$	-	-	60	pF
Switching Characteristics						
Turn-On Time	t_{on}	$I_D = 200mA$	-	4	10	ns
Turn-Off Time	t_{off}	$I_D = 200mA$	-	4	10	ns

Note 2. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

