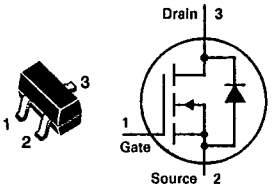
BSS123L

CASE 318-03, STYLE 21
SOT-23 (TO-236AB)



TMOS FET TRANSISTOR

N-CHANNEL

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	100	Vdc
Gate-Source Voltage	V_{GS}	±35	Vdc
Drain Current Continuous (1) Pulsed (2)	 I_D I_{DM}	 0.17 0.68	Adc

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board,* T_A = 25°C Derate above 25°C	P_D	225 1.8	mW mW/°C
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate,** T_A = 25°C Derate above 25°C	P_D	300 2.4	mW mW/°C
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature	T_J, T_{stg}	−55 to +150	°C

*FR-5 = 1.0 x 0.75 x 0.062 in.
**Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.

DEVICE MARKING

BSS123L = 5A

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Drain-Source Breakdown Voltage (V_{GS} = 0, I_D = 250 μA)	$V_{(BR)DSS}$	100	—	—	Vdc
Zero Gate Voltage Drain Current (V_{GS} = 0, V_{DS} = 100 V) T_J = 25°C T_J = 125°C	I_{DSS}	— —	— —	15 60	μAdc
Gate-Body Leakage Current (V_{GS} = 20 Vdc, V_{DS} = 0)	I_{GSS}	—	—	50	nAdc
ON CHARACTERISTICS*					
Gate Threshold Voltage (V_{DS} = V_{GS}, I_D = 1.0 mA)	$V_{GS(th)}$	0.8	—	2.8	Vdc
Static Drain-Source On-Resistance (V_{GS} = 10 Vdc, I_D = 100 mA)	$r_{DS(on)}$	—	5.0	6.0	Ohms
Forward Transconductance (V_{DS} = 25 V, I_D = 100 mA)	g_{fs}	80	—	—	mmhos
DYNAMIC CHARACTERISTICS					
Input Capacitance (V_{DS} = 25 V, V_{GS} = 0, f = 1.0 MHz)	C_{iss}	—	20	—	pF
Output Capacitance (V_{DS} = 25 V, V_{GS} = 0, f = 1.0 MHz)	C_{oss}	—	9.0	—	pF
Reverse Transfer Capacitance (V_{DS} = 25 V, V_{GS} = 0, f = 1.0 MHz)	C_{rss}	—	4.0	—	pF
SWITCHING CHARACTERISTICS*					
Turn-On Delay Time (V_{CC} = 30 V, I_C = 0.28 A, V_{GS} = 10 V, R_{GS} = 50 Ω)	$t_{d(on)}$	—	20	—	ns
Turn-Off Delay Time	$t_{d(off)}$	—	40	—	ns
REVERSE DIODE					
Diode Forward On-Voltage (I_D = 0.34 A, V_{GS} = 0 V)	V_{SD}	—	—	1.3	V

(1) The Power Dissipation of the package may result in a lower continuous drain current.
(2) Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.
*Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.