BSS129

N-Channel Depletion-Mode MOS Transistor

Siliconix incorporated

PRODUCT SUMMARY

$V_{(BR)DSV}$ (V)	$r_{DS(ON)}$ (Ω)	I_D (A)	PACKAGE
230	20	0.15	TO-92 CDRM

CD = Center Drain, RM = Reverse Mold

Performance Curves: **VDDV24** (See Section 7)

TO-92-18   BOTTOM VIEW

1 GATE
2 DRAIN
3 SOURCE
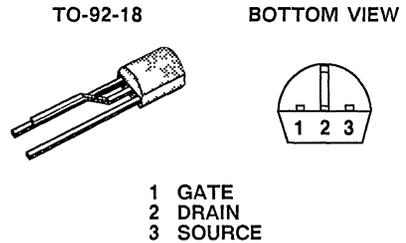
ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	BSS129	UNITS
Drain-Source Voltage		V_{DS}	230	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current	$T_A = 35°C$	I_D	0.15	A
Pulsed Drain Current [1]		I_{DM}	0.60	
Power Dissipation		P_D	1	W
Operating Junction and Storage Temperature		T_J, T_{stg}	−55 to 150	°C
Lead Temperature (1/16" from case for 10 seconds)		T_L	300	

THERMAL RESISTANCE

THERMAL RESISTANCE	SYMBOL	BSS129	UNITS
Junction-to-Ambient	R_{thJA}	125	°C/W

[1] Pulse width limited by maximum junction temperature

ELECTRICAL CHARACTERISTICS[1]				LIMITS			
					BSS129		
PARAMETER	SYMBOL	TEST CONDITIONS		TYP[2]	MIN	MAX	UNIT
STATIC							
Drain-Source Breakdown Voltage	$V_{(BR)DSV}$	$V_{GS} = -3$ V, $I_D = 250$ mA		260	230		V
Gate-Source Cutoff Voltage	$V_{GS(OFF)}$	$V_{DS} = 3$ V, $I_D = 1$ mA		−2.3	−0.7		
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0$ V, $V_{GS} = 20$ V		± 1		± 100	nA
Drain Cutoff Current	$I_{D(OFF)}$	$V_{DS} = 230$ V $V_{GS} = -3$ V		0.04		0.1	μA
			$T_J = 125°C$	7.5		200	
Drain-Source On-Resistance	$r_{DS(ON)}$	$V_{GS} = 0$ V, $I_D = 14$ mA		4		20	Ω
Forward Transconductance	g_{FS}	$V_{DS} = 25$ V, $I_D = 250$ mA		175	140		mS
DYNAMIC							
Input Capacitance	C_{iss}	$V_{DS} = 25$ V $V_{GS} = -5$ V $f = 1$ MHz		70			pF
Output Capacitance	C_{oss}			20			
Reverse Transfer Capacitance	C_{rss}			10			
SWITCHING							
Turn-On Time	$t_{d(ON)}$	$V_{DD} = 25$ V, $R_L = 830$ Ω $I_D = 30$ mA, $V_{GEN} = -5$ V $R_G = 25$ Ω (Switching time is essentially independent of operating temperature)		15			ns
	t_r			75			
Turn-Off Time	$t_{d(OFF)}$			40			
	t_f			100			

NOTES: 1. $T_A = 25\,°C$ unless otherwise noted.
2. For design aid only, not subject to production testing.
3. Pulse test; PW = 300 μs, duty cycle ≤ 2%.

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