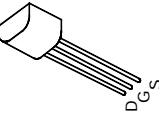


ISSUE 2 – MARCH 94

FEATURES

- * 100 Volt V_{DS}
- * $R_{DS(on)} = 0.5\Omega$
- * Spice model available



E-Line
TO92 Compatible

ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^\circ\text{C}$ unless otherwise stated).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Input Capacitance (2)	C_{iss}			350	pF	
Common Source Output Capacitance (2)	C_{oss}			140	pF	$V_{DS}=25\text{ V}, V_{GS}=0\text{V}, f=1\text{MHz}$
Reverse Transfer Capacitance (2)	C_{rss}			30	pF	
Turn-On Delay Time (2)(3)	$t_{d(on)}$			8	ns	
Rise Time (2)(3)	t_r			25	ns	$V_{DD}=25\text{V}, V_{GEN}=10\text{V}, I_D=3\text{A}$ $R_{GS}=50\Omega$
Turn-Off Delay Time (2)(3)	$t_{d(off)}$			30	ns	
Fall Time (2)(3)	t_f			16	ns	

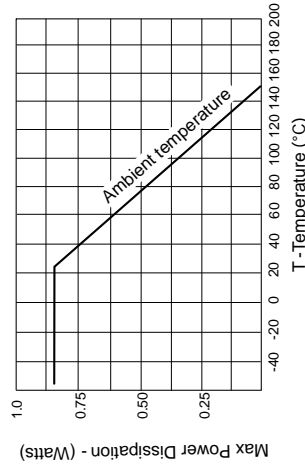
(1) Measured under pulsed conditions. Width=300 μ s. Duty cycle $\leq 2\%$

(2) Sample test.

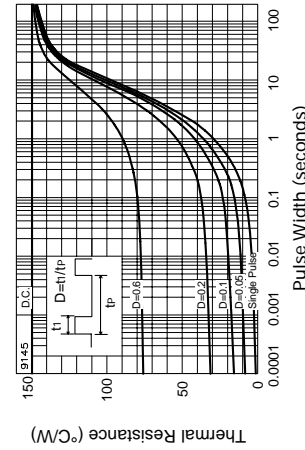
(3) Switching times measured with 50 Ω source impedance and <5ns rise time on a pulse generator

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	MAX.	UNIT
Thermal Resistance: Junction to Ambient	$R_{th(j-amb)}$	150	$^\circ\text{C/W}$
Junction to Case	$R_{th(j-case)}$	50	$^\circ\text{C/W}$



Derating curve



Maximum transient thermal impedance

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Drain-Source Voltage	V_{DS}	100	V
Continuous Drain Current at $T_{amb}=25^\circ\text{C}$	I_D	0.9	A
Practical Continuous Drain Current at $T_{amb}=25^\circ\text{C}$	I_{DP}	1	A
Pulsed Drain Current	I_{DM}	12	A
Gate Source Voltage	V_{GS}	± 20	V
Power Dissipation at $T_{amb}=25^\circ\text{C}$	P_{tot}	850	mW
Practical Power Dissipation at $T_{amb}=25^\circ\text{C}$ *	P_{totp}	1.13	W
Operating and Storage Temperature Range	T_j, T_{stg}	-55 to +150	$^\circ\text{C}$

*The power which can be dissipated assuming the device is mounted in a typical manner on a P.C.B. with copper equal to 1 inch square minimum

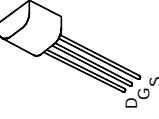
ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^\circ\text{C}$ unless otherwise stated).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Drain-Source Breakdown Voltage	BV_{DSS}	100			V	$I_D=1\text{mA}, V_{GS}=0\text{V}$
Gate-Source Threshold Voltage	$V_{GS(th)}$	1		3	V	$I_D=1\text{mA}, V_{DS}=V_{GS}$
Gate-Body Leakage	I_{GSS}			20	nA	$V_{GS}=\pm 20\text{V}, V_{DS}=0\text{V}$
Zero Gate Voltage Drain Current	I_{DSS}			10 100	μA μA	$V_{DS}=100\text{V}, V_{GS}=0$ $V_{DS}=80\text{V}, V_{GS}=0\text{V}, T=125^\circ\text{C}(2)$
On-State Drain Current(1)	$I_{D(on)}$	9			A	$V_{DS}=25\text{ V}, V_{GS}=10\text{V}$
Static Drain-Source On-State Resistance (1)	$R_{DS(on)}$		0.36 0.48	0.5 0.65	Ω Ω	$V_{GS}=10\text{V}, I_D=3\text{A}$ $V_{GS}=5\text{V}, I_D=1.5\text{A}$
Forward Transconductance (1)(2)	g_{fs}	600			mS	$V_{DS}=25\text{V}, I_D=3\text{A}$

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Rise Time (2)(3)	t_r			25	ns	$V_{DD}=25\text{ V}, V_{GEN}=10\text{ V}, I_D=3\text{ A}$ $R_{GS}=50\Omega$
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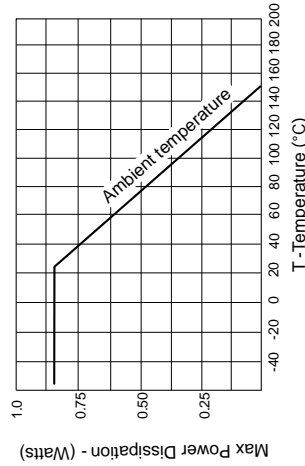
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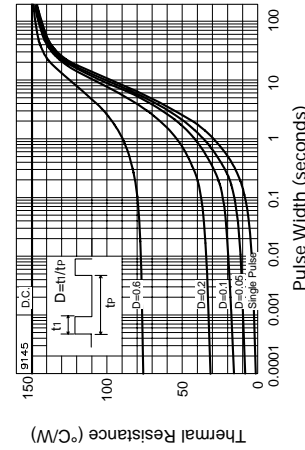
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TYPICAL CHARACTERISTICS

