

FEATURES

- Economy Packaging
- Fast Switching – $t_r < 5$ ns (2N5638)
- Low Drain-Source 'ON' Resistance $< 30 \Omega$ (2N5638)

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ABSOLUTE MAXIMUM RATINGS

Drain-Source Breakdown Voltage	30 V
Drain-Gate Breakdown Voltage	30 V
Source-Gate Breakdown Voltage	30 V
Forward Gate Current	10 mA
Total Device Dissipation at 25°C	310 mW
Derate above 25°C	2.82 mW/°C
Operating Junction Temperature Range	-65 to +135°C
Storage Temperature Range	-65 to +150°C

PIN CONFIGURATION

CHIP TOPOGRAPHY

5001B

NOTE: SUBSTRATE IS GATE

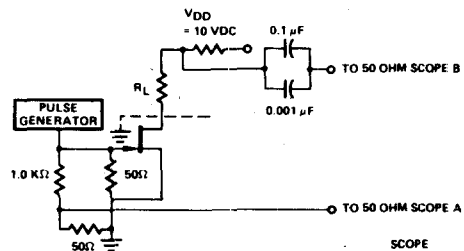
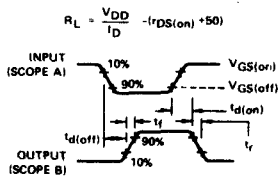
ORDERING INFORMATION

TO-92	WAFER	DICE
2N5638	2N5638/W	2N5638/D
2N5639	2N5639/W	2N5638/D
2N5640	2N5640/W	2N5640/D

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

CHARACTERISTIC	2N5638		2N5639		2N5640		UNIT	TEST CONDITIONS
	MIN	MAX	MIN	MAX	MIN	MAX		
BV _{GS}	-30	-	-30	-	-30	-	V	I _G = -10 μA, V _{DS} = 0
I _{GS}	-	-1.0	-	-1.0	-	-1.0	nA	V _{GS} = -15 V, V _{DS} = 0
I _{D(off)}	-	1.0	-	1.0	-	1.0	nA	V _{DS} = 15 V, V _{GS} = -12 V (2N5638)
I _{DSS}	50	-	25	-	5.0	-	μA	V _{GS} = -8 V (2N5639), V _{GS} = -6 V (2N5640)
V _{DS(on)}	-	0.5	-	0.5	-	0.5	V	V _{GS} = 0, I _D = 12 mA (2N5638), I _D = 6 mA (2N5639), I _D = 3 mA (2N5640)
r _{DS(on)}	-	30	-	60	-	100	Ω	I _D = 1 mA, V _{GS} = 0
r _{dS(on)}	-	30	-	60	-	100	Ω	V _{GS} = 0, I _D = 0
C _{iss}	-	10	-	10	-	10	pF	V _{GS} = -12 V, V _{DS} = 0
C _{rss}	-	4.0	-	4.0	-	4.0	pF	f = 1 MHz
t _{d(on)}	-	4.0	-	6.0	-	8.0	ns	V _{DD} = 10 V, I _{D(on)} = 12 mA (2N5638)
t _r	-	5.0	-	8.0	-	10	ns	V _{GS(on)} = 0, I _{D(on)} = 6 mA (2N5639)
t _d	-	5.0	-	10	-	15	ns	V _{GS(off)} = -10 V, I _{D(on)} = 3 mA (2N5640)
t _f	-	10	-	20	-	30	ns	R _G = 50 Ω

NOTE: 1. Pulse test PW ≤ 300 μs, duty cycle ≤ 3.0%.



SCOPE
TEKTRONIX 567A
OR EQUIVALENT