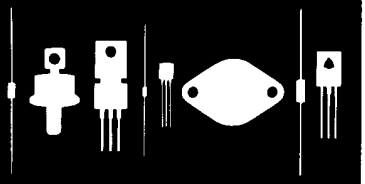
Central
Semiconductor Corp.
145 Adams Avenue
Hauppauge, New York 11788



2N5638
2N5639
2N5640

N CHANNEL SILICON
FIELD EFFECT TRANSISTOR

JEDEC TO-92 CASE (DSG)

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N5638 series types are silicon N channel field effect transistors designed for switching applications.

MAXIMUM RATINGS (TA=25°C unless otherwise noted)

	SYMBOL		UNIT
Drain-Gate Voltage	V_{GD}	30	V
Drain-Source Voltage	V_{DS}	30	V
Reverse Gate-Source Voltage	V_{GSR}	30	V
Gate Current	I_G	10	mA
Power Dissipation	P_D	310	mW
Operating and Storage Junction Temperature	T_J, T_{STG}	-65 TO +150	°C

ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

		2N5638		2N5639		2N5640		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	MIN	MAX	UNIT
I_{GSS}	V_{GS}=15V		1.0		1.0		1.0	nA
I_{GSS}	V_{GS}=15V, T_A=100°C		1.0		1.0		1.0	µA
I_{DSS}	V_{DS}=20V	50		25		5.0		mA
$I_{D(OFF)}$	V_{DS}=15V, V_{GS}=12V		1.0		-		-	nA
$I_{D(OFF)}$	V_{DS}=15V, V_{GS}=8.0V		-		1.0		-	nA
$I_{D(OFF)}$	V_{DS}=15V, V_{GS}=6.0V		-		-		1.0	nA
$I_{D(OFF)}$	V_{DS}=15V, V_{GS}=12V, T_A=100°C		1.0		-		-	µA
$I_{D(OFF)}$	V_{DS}=15V, V_{GS}=8.0V, T_A=100°C		-		1.0		-	µA
$I_{D(OFF)}$	V_{DS}=15V, V_{GS}=6.0V, T_A=100°C		-		-		1.0	µA
BV_{GSS}	I_G=10µA	30		30		30		V
$V_{DS(ON)}$	I_D=12mA		0.5		-		-	V
$V_{DS(ON)}$	I_D=6.0mA		-		0.5		-	V
$V_{DS(ON)}$	I_D=3.0mA		-		-		0.5	V
$r_{DS(ON)}$	I_D=1.0mA		30		60		100	Ω
$r_{ds(ON)}$	V_{GS}=0, I_D=0, f=1.0kHz		30		60		100	Ω
C_{iss}	V_{GS}=12V, V_{DS}=0, f=1.0MHz		10		10		10	pF
C_{rss}	V_{GS}=12V, V_{DS}=0, f=1.0MHz		4.0		4.0		4.0	pF
$t_{d(ON)}$	V_{DD}=10V, $V_{GS(OFF)}$=10V, $I_{D(ON)}$=12mA, R_G=50Ω		4.0		-		-	ns
$t_{d(ON)}$	V_{DD}=10V, $V_{GS(OFF)}$=10V, $I_{D(ON)}$=6.0mA, R_G=50Ω		-		6.0		-	ns
$t_{d(ON)}$	V_{DD}=10V, $V_{GS(OFF)}$=10V, $I_{D(ON)}$=3.0mA, R_G=50Ω		-		-		8.0	ns
t_r	V_{DD}=10V, $V_{GS(OFF)}$=10V, $I_{D(ON)}$=12mA, R_G=50Ω		5.0		-		-	ns
t_r	V_{DD}=10V, $V_{GS(OFF)}$=10V, $I_{D(ON)}$=6.0mA, R_G=50Ω		-		8.0		-	ns
t_r	V_{DD}=10V, $V_{GS(OFF)}$=10V, $I_{D(ON)}$=3.0mA, R_G=50Ω		-		-		10	ns
$t_{d(OFF)}$	V_{DD}=10V, $V_{GS(OFF)}$=10V, $I_{D(ON)}$=12mA, R_G=50Ω		5.0		-		-	ns
$t_{d(OFF)}$	V_{DD}=10V, $V_{GS(OFF)}$=10V, $I_{D(ON)}$=6.0mA, R_G=50Ω		-		10		-	ns
$t_{d(OFF)}$	V_{DD}=10V, $V_{GS(OFF)}$=10V, $I_{D(ON)}$=3.0mA, R_G=50Ω		-		-		15	ns
t_f	V_{DD}=10V, $V_{GS(OFF)}$=10V, $I_{D(ON)}$=12mA, R_G=50Ω		10		-		-	ns
t_f	V_{DD}=10V, $V_{GS(OFF)}$=10V, $I_{D(ON)}$=6.0mA, R_G=50Ω		-		20		-	ns
t_f	V_{DD}=10V, $V_{GS(OFF)}$=10V, $I_{D(ON)}$=3.0mA, R_G=50Ω		-		-		30	ns

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