

NTE464 (P-Ch) & NTE465 (N-Ch) Silicon Complementary MOSFET Transistors Enhancement Mode for Switching Applications

Absolute Maximum Ratings:

Drain–Source Voltage, V_{DS}	25V
Drain–Gate Voltage, V_{DG}	30V
Gate–Source Voltage, V_{GS}	$\pm 30V$
Gate Current, I_G	30mA
Total Device Dissipation ($T_A = +25^\circ C$), P_D	300mW
Derate Above $25^\circ C$	1.7mW/ $^\circ C$
Total Device Dissipation ($T_C = +25^\circ C$), P_D	800mW
Derate Above $25^\circ C$	4.56mW/ $^\circ C$
Operating Junction Temperature, T_J	$+175^\circ C$
Storage Temperature Range, T_{stg}	-55° to $+175^\circ C$

Electrical Characteristics: ($T_A = +25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Drain–Source Breakdown Voltage	$V_{(BR)DSX}$	$I_D = -10\mu A$, $V_{GS} = 0$	-25	–	–	V
Zero–Gate–Voltage Drain Current	I_{DSS}	$V_{DS} = -10V$, $V_{GS} = 0$, $T_A = +25^\circ C$	–	–	-10	nA
		$V_{DS} = -10V$, $V_{GS} = 0$, $T_A = +150^\circ C$	–	–	-10	μA
Gate Reverse Current	I_{GSS}	$V_{GS} = \pm 30V$, $V_{DS} = 0$	–	–	± 10	pA
ON Characteristics						
Gate Threshold Voltage	$V_{GS(Th)}$	$V_{DS} = -10V$, $I_D = -10\mu A$	-1	–	-5	V
Drain–Source On–Voltage	$V_{DS(on)}$	$I_D = -2mA$, $V_{GS} = -10V$	–	–	-1	V
On–State Drain Current	$I_{D(on)}$	$V_{GS} = -10V$, $V_{DS} = -10V$	-3	–	–	mA

Electrical Characteristics (Cont'd): ($T_A = +25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Small-Signal Characteristics						
Drain-Source Resistance NTE464	$r_{ds(on)}$	$V_{GS} = -10V, I_D = 0, f = 1kHz$	–	–	600	Ω
NTE465			–	–	300	Ω
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = -10V, I_D = 2mA, f = 1kHz$	1000	–	–	$\mu mhos$
Input Capacitance	C_{iss}	$V_{DS} = -10V, V_{GS} = 0, f = 140kHz$	–	–	5	pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = 0, V_{GS} = 0, f = 140kHz$	–	–	1.3	pF
Drain-Substrate Capacitance NTE464	$C_{d(sub)}$	$V_{D(SUB)} = -10V, f = 140kHz$	–	–	4	pF
NTE465			–	–	5	pF
Switching Characteristics						
Turn-On Delay	t_{d1}	$I_D = -2mA, V_{DS} = -10V, V_{GS} = -10V$	–	–	45	ns
Rise Time	t_r		–	–	65	ns
Turn-Off Delay	t_{d2}		–	–	60	ns
Fall Time	t_f		–	–	100	ns

