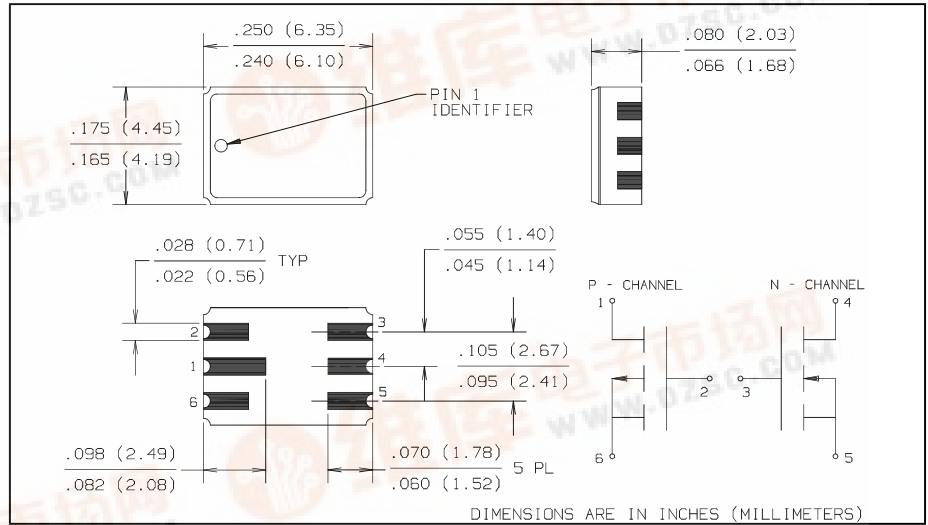


Product Bulletin HCT802
September 1996

Dual Enhancement Mode MOSFET Types HCT802, HCT802TX, HCT802TXV



Features

- 6 pad surface mount package
- $V_{DS} = 90V$
- $R_{DS(on)} < 5\Omega$
- $I_{D(on)}$ N-Channel = 1.5A
P-Channel = 1.1A
- Two devices selected for V_{DS} , $I_{D(on)}$ and $R_{DS(on)}$ similarity
- Full TX Processing Available
- Gold plated contacts

Description

HCT802 offers an N-Channel and P-Channel MOS transistor in a hermetic ceramic surface mount package. The devices used are similar to industry standards 2N6661 N-Channel device and VP1008 P-Channel device. These two enhancement mode MOSFETS are particularly well matched for V_{DS} , $I_{DS(on)}$, $R_{DS(on)}$ and G_{fs} .

Order HCT802TX for processing per MIL-PRF-19500. Typical screening and lot acceptance tests are provided on page 13-4. TX products receive a V_{GS} HTRB at 16 V for 48 hrs. at 150° C and a V_{DS} HTRB at 72 V for 160 hrs. at 150° C.

Absolute Maximum Ratings

Drain-Source Voltage	90 V
Gate-Source Voltage	± 20 V
Drain Current (Limited by T_j max) N-Channel	2 A
P-Channel	1.1 A
Operating and Storage Temperature	-55° C to +150° C

Power Dissipation

$T_A = 25^\circ$ C (Both devices equally driven)	0.5 W Total
$T_S = 25^\circ$ C (Both devices equally driven)	1.5 W Total ⁽¹⁾

(T_s = Substrate that the package is soldered to)

Notes

(1) This rating is provided as an aid to designers. It is dependent upon mounting material and methods and is not measureable as an outgoing test.

Types HCT802, HCT802TX, HCT802TXV

Electrical Characteristics ($T_A = 25^{\circ}\text{C}$ unless specified otherwise)

Symbol	Parameters	Device B=Both	Min	Max	Units	Test Conditions
B_{VDSS}	Drain-Source Breakdown	B	90*		V	$I_D = 10\ \mu\text{A}^*$, $V_{GS} = 0$
V_{TH}	Gate Threshold Voltage	N	0.75	2.5	V	$V_{GS} = V_{DS}$, $I_D = 1\ \text{mA}$
		P	-2.0	-4.5	V	$I_D = -1\ \text{mA}$
I_{GSS}	Gate-Body Leakage	B		± 100	nA	$V_{GS} = \pm 20\ \text{V}$, $V_{DS} = 0$
I_{DSS}	Zero Gate Voltage Drain Current	B		10*	μA	$V_{DS} = 90\ \text{V}^*$, $V_{GS} = 0\ \text{V}$
		B		500*	μA	$T_j = 150^{\circ}\text{C}$
$I_{D(on)}$	On-State Drain Current	N	1.5		A	$V_{DS} = 25\ \text{V}$, $V_{GS} = 10\ \text{V}$
		P	-1.1		A	$V_{DS} = -15\ \text{V}$, $V_{GS} = -10\ \text{V}$
$R_{DS(on)}$	Drain-Source on Resistance	B		5	Ω	$V_{GS} = 10\ \text{V}^*$, $I_D = 1\ \text{A}^*$
G_{fs}	Forward Transconductance	N	170		mmho	$V_{DS} = 25\ \text{V}$, $I_D = 0.5\ \text{A}$
		P	200		mmho	$V_{DS} = -10\ \text{V}$, $I_D = -0.5\ \text{A}$
C_{ISS}	Input Capacitance	N		70	pf	$V_{DS} = 25\ \text{V}$, $V_{GS} = 0\ \text{V}$, $f = 1\ \text{MHz}$
		P		150	pf	$V_{DS} = -25\ \text{V}$, $V_{GS} = 0\ \text{V}$, $f = 1\ \text{MHz}$
C_{OSS}	Common Source Output Capacitance	N		40	pf	$V_{DS} = 25\ \text{V}$, $V_{GS} = 0\ \text{V}$, $f = 1\ \text{MHz}$
		P		60	pf	$V_{DS} = -25\ \text{V}$, $V_{GS} = 0\ \text{V}$, $f = 1\ \text{MHz}$
C_{RSS}	Reverse Transfer Capacitance	N		10	pf	$V_{DS} = 25\ \text{V}$, $V_{GS} = 0\ \text{A}$, $f = 1\ \text{MHz}$
		P		25	pf	$V_{DS} = -25\ \text{V}$, $V_{GS} = 0\ \text{A}$, $f = 1\ \text{MHz}$
$t_{(on)}$	Turn-on-time	N		15	ns	$V_{DD} = 25\ \text{V}$, $I_D = 1\ \text{A}$, $R_L = 50\ \Omega$
		P		50	ns	$V_{DD} = -25\ \text{V}$, $I_D = -0.5\ \text{A}$, $R_L = 50\ \Omega$
$t_{(off)}$	Turn-off-time	N		17	ns	$V_{DD} = 25\ \text{V}$, $I_D = 1\ \text{A}$, $R_L = 50\ \Omega$
		P		50	ns	$V_{DD} = -25\ \text{V}$, $I_D = -0.5\ \text{A}$, $R_L = 50\ \Omega$

* Reverse polarity for P-Channel device