

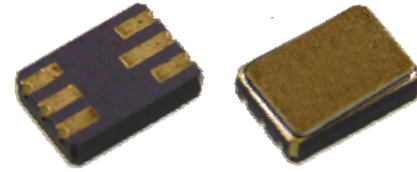
# Dual Enhancement Mode MOSFET



## 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  $V_{DS}$ ,  $I_{D(on)}$ ,  $R_{DS(on)}$  and  $G_{fs}$ .

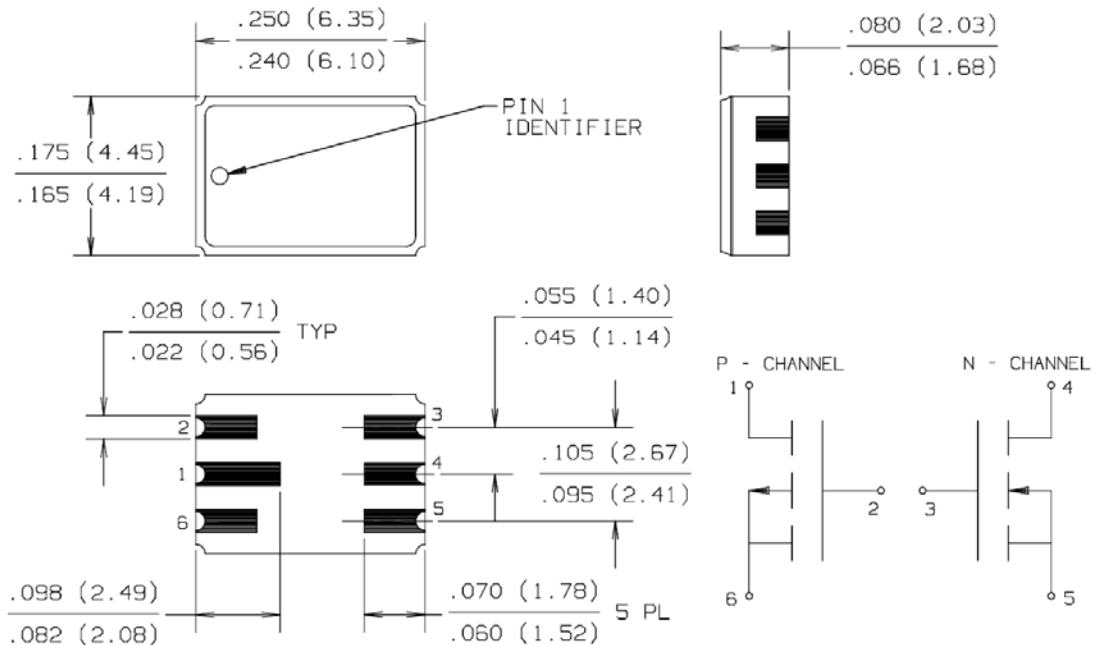
*TX and TXV devices are processed to OPTEK's military screening program patterned after MIL-PRF-19500.*

TX products receive a  $V_{GS}$  HTRB at 24 V for 48 hrs. at 150° C and a  $V_{DS}$  HTRB at 48 V for 260 hrs. at 150° C.

### Applications:

- Drivers: Solid State Relays, Lamps, Solenoids, Displays, Memories, etc.
- Motor Control
- Power Supply Circuits

Part Number	Sensor Type	$V_{DSS}$ Min	$I_{D(on)}$ (mA) Min	$G_{fs}$ (ms) Min	$t_{(ON)} / t_{(OFF)}$ (ns) Max	Package
HCT801	N & P-Channel Enhancement MOSFET	90	1.5 & -1.1	170 & 200	15/17 & 50/50	6-pin Ceramic
HCT801TX						
HCT801TXV						



DIMENSIONS ARE IN INCHES (MILLIMETERS)

General Note  
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

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

## Power Dissipation

TA = 25°C (Both devices equally driven)	0.5 W Total
TA = 25°C (Both devices equally driven)	1.5 W Total <sup>(1)</sup>
(TS = Substrate that the package is soldered to)	

## Electrical Characteristics (TA = 25° C unless otherwise noted)

SYMBOL	PARAMETER	DEVICE B=BOTH	MIN	MAX	UNITS	TEST CONDITIONS
B <sub>VDS</sub>	Drain-Source Breakdown	B	90 <sup>(2)</sup>		V	I <sub>D</sub> = 10 μA <sup>(2)</sup> , V <sub>GS</sub> = 0
V <sub>TH</sub>	Gate Threshold Voltage	N	0.75	2.5	V	V <sub>GS</sub> = V <sub>DS</sub> , I <sub>D</sub> = 1 mA
		P	-2.0	-4.5	V	I <sub>D</sub> = -1 mA
I <sub>GSS</sub>	Gate-Body Leakage	B		±100	nA	V <sub>GS</sub> = ± 20 V, V <sub>DS</sub> = 0
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	B		10 <sup>(2)</sup>	μA	V <sub>DS</sub> = 90 V <sup>(2)</sup> , V <sub>GS</sub> = 0 V
		B		500 <sup>(2)</sup>	μA	Tj = 150° C
I <sub>D(on)</sub>	On-State Drain Current	N	1.5		A	V <sub>DS</sub> = 25 V, V <sub>GS</sub> = 10 V
		P	-1.1		A	V <sub>DS</sub> = -15 V, V <sub>GS</sub> = -10 V
R <sub>DS(on)</sub>	Drain-Source on Resistance	B		5	Ω	V <sub>GS</sub> = 10 V <sup>(2)</sup> , I <sub>D</sub> = 1 A <sup>(2)</sup>
G <sub>fs</sub>	Forward Transconductance	N	170		mmho	V <sub>DS</sub> = 25V, I <sub>D</sub> = 0.5 A
		P	200		Mmho	V <sub>DS</sub> = -10 V, I <sub>D</sub> = -0.5 A
C <sub>ISS</sub>	Input Capacitance	N		70	pf	V <sub>DS</sub> = 25 V, V <sub>GS</sub> = 0 V, f = 1 MHz
		P		150	pf	V <sub>DS</sub> = -25 V, V <sub>GS</sub> = 0 V, f = 1 MHz
C <sub>OSS</sub>	Common Source Output Capacitance	N		40	pf	V <sub>DS</sub> = 25 V, V <sub>GS</sub> = 0 V, f = 1 MHz
		P		60	pf	V <sub>DS</sub> = -25 V, V <sub>GS</sub> = 0 V, f = 1 MHz
C <sub>RSS</sub>	Reverse Transfer Capacitance	N		10	pf	V <sub>DS</sub> = 25 V, V <sub>GS</sub> = 0 A, f = 1 MHz
		P		25	pf	V <sub>DS</sub> = -25 V, V <sub>GS</sub> = 0 A, f = 1 MHz

Note:

- 1) This rating is provided as an aid to designers. It is dependent upon mounting material and methods and is not measurable as an outgoing test.
- 2) Reverse polarity for P-Channel device

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

SYMBOL	PARAMETER	DEVICE B=BOTH	MIN	MAX	UNITS	TEST CONDITIONS
$t_{(on)}$	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	$V_{DD} = -25\text{ v}$ , $I_D = -0.5\text{ A}$ , $R_L = 50\ \Omega$

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