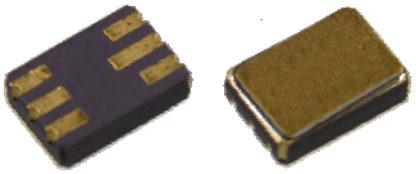
Dual Enhancement Mode MOSFET

HCT802, HCT802TX, HCT802TXV

Features:

- 6 pad surface mount package
- V_{DS} = 90V
- R_{DS}(on) < 5Ω
- ID(on) N-Channel = 1.5A I 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:

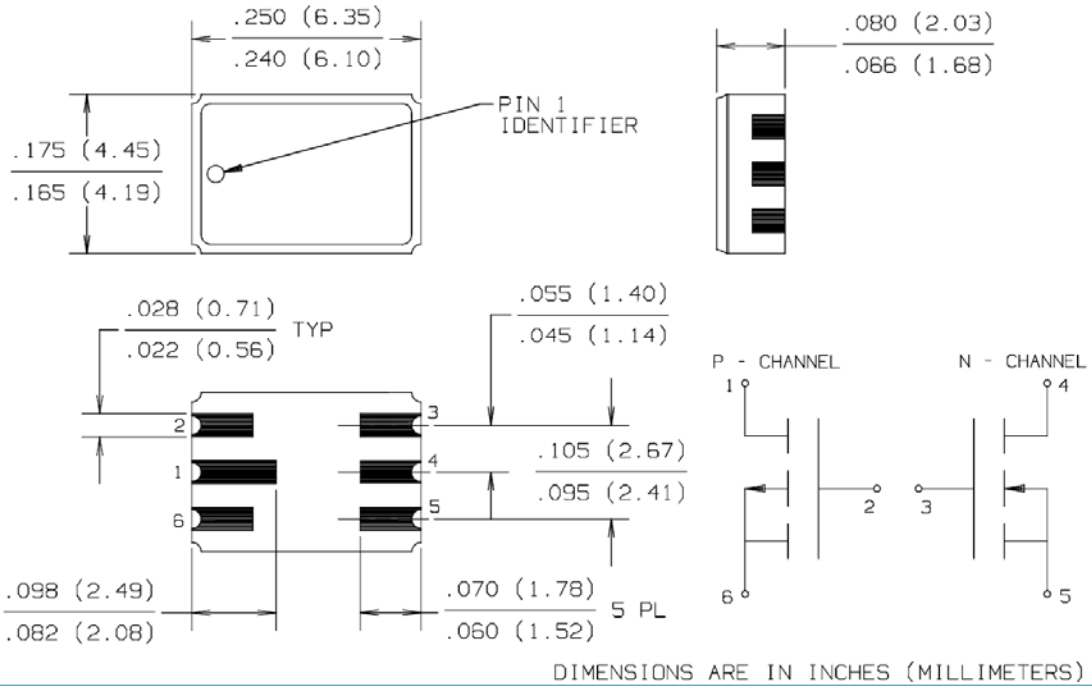
HCT802 offers an N-Channel and P-Channel MOS transistor in a hermetic ceramic surface mount package. The devices used are similar to industry standards 2N6661 N-Channel device and VP1008 P-Channel device. These two enhancement mode MOSFETS are particularly well matched for V_{DS}, $I_{DS(on)}$, $R_{DS(on)}$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

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						



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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 (1)
(TS = Substrate that the package is soldered to)	

Electrical Characteristics (T_A = 25° C unless otherwise noted)

SYMBOL	PARAMETER	DEVICE B=BOTH	MIN	MAX	UNITS	TEST CONDITIONS
B_{VDSS}	Drain-Source Breakdown	B	90(2)		V	I_D = 10 µA(2), V_{GS} = 0
V_{TH}	Gate Threshold Voltage	N	0.75	2.5	V	V_{GS} = V_{DS}, I_D = 1 mA
		P	-2.0	-4.5	V	I_D = -1 mA
I_{GSS}	Gate-Body Leakage	B		±100	nA	V_{GS} = ± 20 V, V_{DS} = 0
I_{DSS}	Zero Gate Voltage Drain Current	B		10(2)	µA	V_{DS} = 90 V(2), V_{GS} = 0 V
		B		500(2)	µA	Tj = 150° C
$I_{D(on)}$	On-State Drain Current	N	1.5		A	V_{DS} = 25 V, V_{GS} = 10 V
		P	-1.1		A	V_{DS} = -15 V, V_{GS} = -10 V
$R_{DS(on)}$	Drain-Source on Resistance	B		5	Ω	V_{GS} = 10 V(2), I_D = 1 A(2)
G_{fs}	Forward Transconductance	N	170		mmho	V_{DS} = 25V, I_D = 0.5 A
		P	200		Mmho	V_{DS} = -10 V, I_D = -0.5 A
C_{ISS}	Input Capacitance	N		70	pf	V_{DS} = 25 V, V_{GS} = 0 V, f = 1 MHz
		P		150	pf	V_{DS} = -25 V, V_{GS} = 0 V, f = 1 MHz
C_{OSS}	Common Source Output Capacitance	N		40	pf	V_{DS} = 25 V, V_{GS} = 0 V, f = 1 MHz
		P		60	pf	V_{DS} = -25 V, V_{GS} = 0 V, f = 1 MHz
C_{RSS}	Reverse Transfer Capacitance	N		10	pf	V_{DS} = 25 V, V_{GS} = 0 A, f = 1 MHz
		P		25	pf	V_{DS} = -25 V, V_{GS} = 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° 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 v, I_D = 1 A, R_L = 50 Ω
		P		50	ns	V_{DD} = -25 v, I_D = -0.5 A, R_L = 50 Ω
$t_{(off)}$	Turn-off-time	N		17	ns	V_{DD} = 25 v, I_D = 1 A, R_L = 50 Ω
		P		50	ns	V_{DD} = -25 v, I_D = -0.5 A, R_L = 50 Ω

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