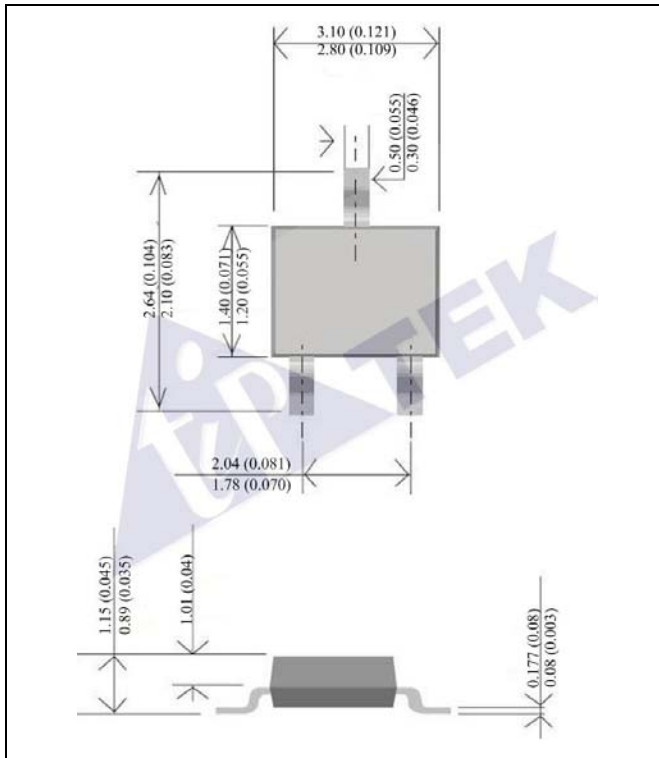


P-CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR



CASE : SOT-23

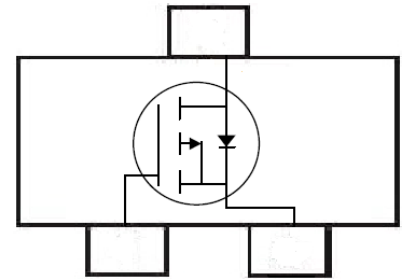
DIMENSIONS IN MILLIMETERS AND (INCHES)

FEATURES

- ADVANCED TRENCH PROCESS TECHNOLOGY
- HIGH DENSITY CELL DESIGN FOR ULTRA LOW ON-RESISTANCE
- FULLY CHARACTERIZED AVALANCHE VOLTAGE AND CURRENT
- IMPROVED SHOOT-THROUGH FOM
- BOTH NORMAL AND PB FREE PRODUCT
ARE AVAILABLE : NORMAL : 80~95% SN, 5~20% PB
PB FREE: 99% SN ABOVE

MECHANICAL DATA

- WE DECLARE THAT THE MATERIAL OF PRODUCT COMPLIANCE WITH ROHS REUREMENTS.
- Pb Free: TP9435PR
Halogen Free: TP9435PR-H



ABSOLUTE MAXIMUM RATINGS

RATINGS AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE SPECIFIED.			
PATING	SYMBOL	TP9435PR	UNITS
DRAIN-SOURCE VOLTAGE	V_{DSS}	-30	V
GATE-SOURCE VOLTAGE	V_{GSS}	±20	V
MAXIMUM DRAIN CURRENT-CONTINUE	I_D	-5.3	A
MAXIMUM POWER DISSIPATION DERATING @ $T_A = 25^\circ\text{C}$	P_D	2.5	W
OPERATING AND STORAGE JUNCTION TEMPERATURE RANGE	$T_J; T_{STG}$	- 55 TO +150	$^\circ\text{C}$
THERMAL RESISTANCE, JUNCTION-TO-CASE	$R_{\theta JC}$	24	$^\circ\text{C}/\text{W}$
THERMAL RESISTANCE, JUNCTION-TO-AMBIENT (NOTE1)	$R_{\theta JA}$	62.5	$^\circ\text{C}/\text{W}$

NOTE:1. 1-in² 2oz Cu PCB board

ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
STATIC						
DRAIN-SOURCE BREAKDOWN VOLTAGE	BV_{DSS}	$V_{GS}=0V, I_D=-250\mu A$	-30	-	-	V
DRAIN-SOURCE ON-STATE RESISTANCE	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-5.3A$	-	50	70	m Ω
DRAIN-SOURCE ON-STATE RESISTANCE	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-4.2A$	-	70	100	
GATE THRESHOLD VOLTAGE	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-1.7	-3	V
ZERO GATE VOLTAGE DRAIN CURRENT	I_{DSS}	$V_{DS}=-24V, V_{GS}=0V$	-	-	-1	μA
GATE BODY LEAKAGE	I_{GSS}	$V_{GS}=\pm 12V, V_{DS}=0V$	-	-	± 100	nA
FORWARD TRANSCONDUCTANCE	g_{fs}	$V_{DS}=-10V, I_D=-5.3A$	-	10	-	S
DYNAMIC						
TURN-ON DELAY TIME	$t_{d(on)}$	$V_{DD}=-15V, R_L=15\Omega$ $I_D=-1A, V_{GEN}=-10V$ $R_G=6\Omega$	-	9	-	ns
TURN-ON RISE TIME	t_r		-	15	-	
TURN-OFF DELAY TIME	$t_{d(off)}$		-	75	-	
TURN-OFF FALL TIME	t_f		-	40	-	
INPUT CAPACITANCE	C_{iss}	$V_{DS}=-15V, V_{GS}=0V$ $f=1.0MHz$	-	745	-	pF
OUTPUT CAPACITANCE	C_{oss}		-	440	-	
REVERSE TRANSFER CAPACITANCE	C_{rss}		-	120	-	
SOURCE-DRAIN DIODE						
MAX. DIODE FORWARD CURRENT	I_S	-	-	-	-2.6	A
DIODE FORWARD VOLTAGE	V_{SD}	$I_S=-2.6A, V_{GS}=0V$	-	-	-1.3	V

NOTE: Pulse Test: Pulse Width $\leq 300 \mu s$, Duty Cycle $\leq 2.0\%$.

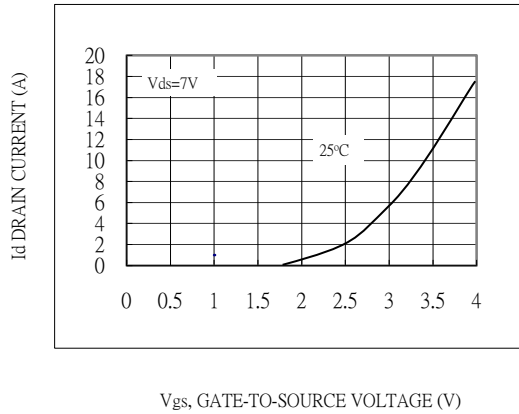


Fig.1-TRANSFER CHARACTERISTICS

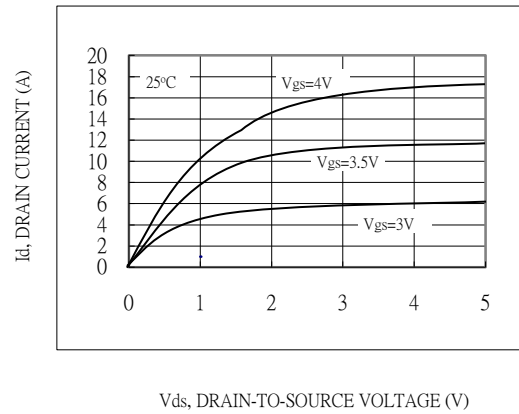


Fig.2-ON-REGION CHARACTERISTICS

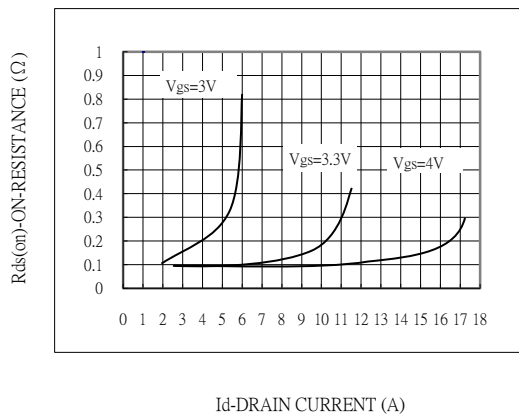


Fig.3-ON-RESISTANCE VERSUS DRAIN CURRENT

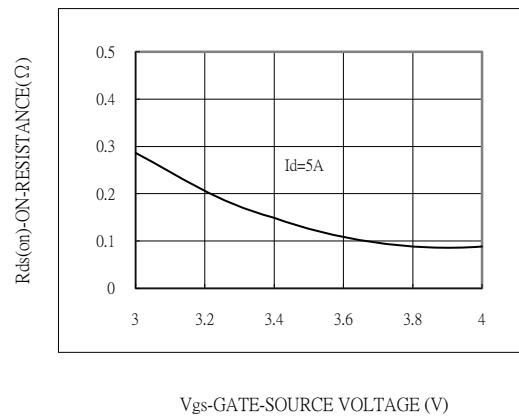


Fig.4-ON-RESISTANCE VS. GATE-TO-SOURCE VOLTAGE