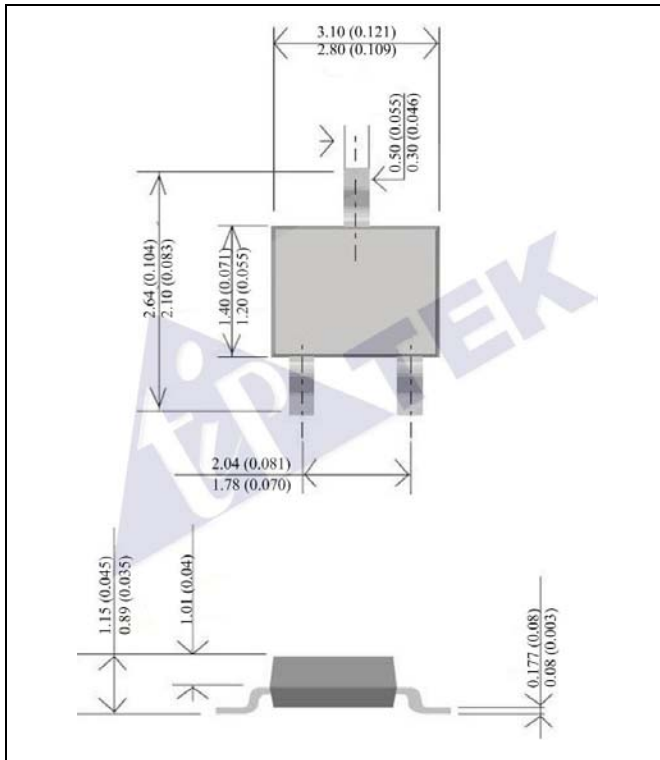


P-CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR



CASE : SOT-23

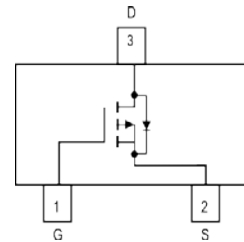
DIMENSIONS IN MILLIMETERS AND (INCHES)

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
- PLASTIC MATERIAL USED CARRIES UNDERWRITERS
LABORATORY CLASSIFICATION 94 V-0

MECHANICAL DATA

- WE DECLARE THAT THE MATERIAL OF PRODUCT COMPLIANCE WITH ROHS REUIREMENTS.
- Pb Free: TP3443PR
Halogen Free: TP3443PR-H



ABSOLUTE MAXIMUM RATINGS

RATINGS AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE SPECIFIED.			
PATING	SYMBOL	VALUE	UNITS
DRAIN-SOURCE VOLTAGE	V_{DSS}	-20	V
GATE-SOURCE VOLTAGE	V_{GSS}	± 12	V
MAXIMUM DRAIN CURRENT-CONTINUE	I_D	-4.7	A
MAXIMUM PULSED DRAIN CURRENT	I_{DP}	-20	A
MAXIMUM POWER DISSIPATION DERATING @ $T_A = 25^\circ\text{C}$	P_D	1.1	W
OPERATING AND STORAGE JUNCTION TEMPERATURE RANGE	$T_J; T_{STG}$	- 55 TO +150	$^\circ\text{C}$
THERMAL RESISTANCE, JUNCTION-TO-AMBIENT (NOTE1)	$R_{\theta JA}$	110	$^\circ\text{C}/\text{W}$

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}	$V_{GS}=0V, I_D=-250\mu A$	-20	-	-	V
DRAIN-SOURCE ON-STATE RESISTANCE	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-4.7A$	-	58	70	m Ω
DRAIN-SOURCE ON-STATE RESISTANCE	$R_{DS(on)}$	$V_{GS}=-2.7V, I_D=-3.8A$	-	63	90	
DRAIN-SOURCE ON-STATE RESISTANCE	$R_{DS(on)}$	$V_{GS}=-2.5V, I_D=-1.0A$	-	75	110	
GATE THRESHOLD VOLTAGE	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.6	-0.85	-1.4	V
ZERO GATE VOLTAGE DRAIN CURRENT	I_{DSS}	$V_{DS}=-20V, V_{GS}=0V$	-	-	-1	μA
GATE BODY LEAKAGE	I_{GSS}	$V_{GS}=\pm 12V, V_{DS}=0V$	-	-	± 100	nA
FORWARD TRANSCONDUCTANCE	g_{fs}	$V_{DS}=-10V, I_D=-4.7A$	-	8	-	S
DYNAMIC						
TOTAL GATE CHARGE	Q_g	$V_{DS}=-10V, I_D=-4.7A$ $V_{GS}=-4.5V$	-	24	36	nC
GATE-SOURCE CHARGE	Q_{gs}		-	18	-	
GATE-DRAIN CHARGE	Q_{gd}		-	2.7	-	
TURN-ON DELAY TIME	$t_{d(on)}$	$V_{DD}=-10V, R_D=10\Omega$ $I_D=-1A, V_{GS}=-4.5V$ $R_G=6\Omega$	-	22	35	ns
TURN-ON RISE TIME	t_r		-	35	55	
TURN-ON DELAY TIME	$t_{d(off)}$		-	45	70	
TURN-ON FALL TIME	t_f		-	25	40	
SOURCE-DRAIN DIODE						
MAX. DIODE FORWARD CURRENT	I_S	-	-	-	-1.7	A
DIODE FORWARD VOLTAGE	V_{SD}	$I_S=-1.7A, V_{GS}=0V$	-	-	-1.2	V

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

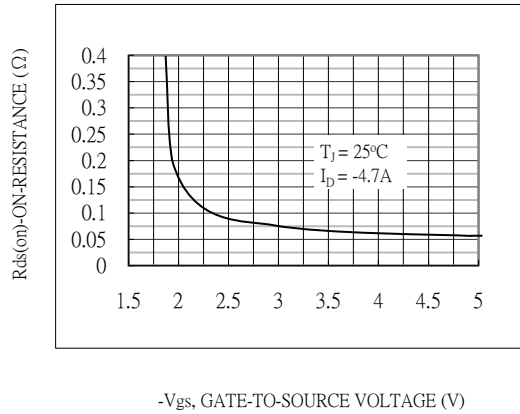


Fig.1-ON-RESISTANCE VERSUS GATE-TO-SOURCE VOLTAGE

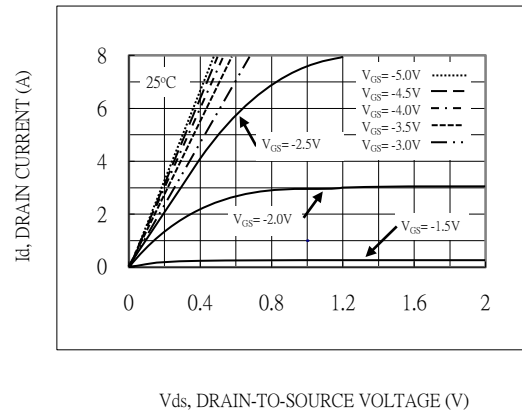


Fig.2-ON-REGION CHARACTERISTICS

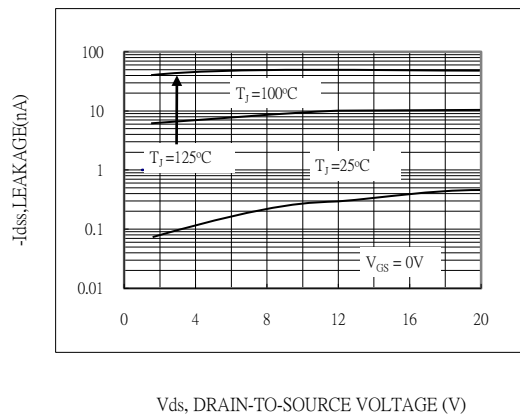


Fig.3-DRAIN-TO-SOURCE LEAKAGE CURRENT VERSUS VOLTAGE