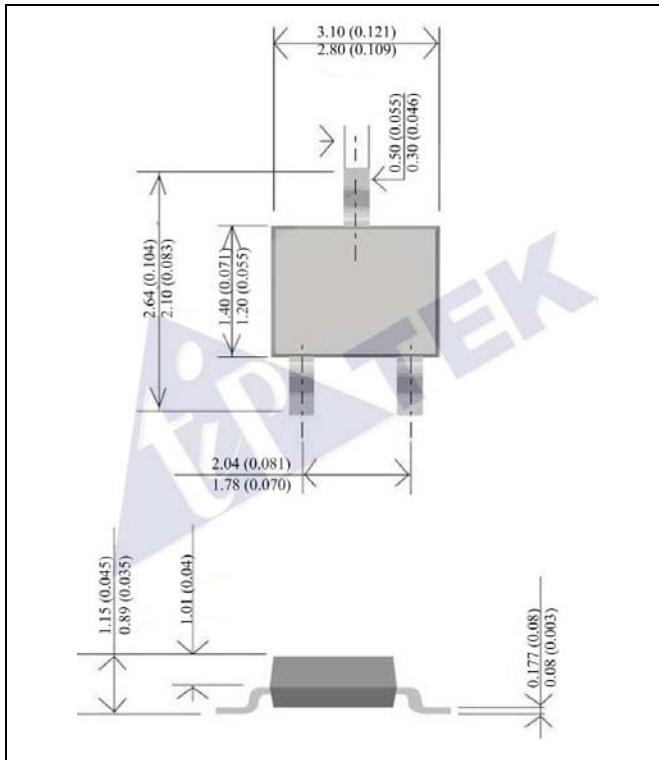


P-CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR



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

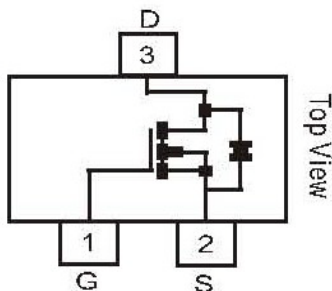
MECHANICAL DATA

- WE DECLARE THAT THE MATERIAL OF PRODUCT COMPLIANCE WITH ROHS REUREMENTS.
- Pb Free: TP2305PR
Halogen Free: TP2305PR-H

ABSOLUTE MAXIMUM RATINGS

RATINGS AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE SPECIFIED.			
PATING	SYMBOL	TP2305PR	UNITS
DRAIN-SOURCE VOLTAGE	V_{DSS}	-30	V
GATE-SOURCE VOLTAGE	V_{GSS}	± 12	V
MAXIMUM DRAIN CURRENT-CONTINUE	I_D	-4.2	A
MAXIMUM POWER DISSIPATION DERATING @ $T_A = 25^\circ\text{C}$	P_D	0.9	W
OPERATING AND STORAGE JUNCTION TEMPERATURE RANGE	$T_J; T_{STG}$	- 55 TO +150	$^\circ\text{C}$
THERMAL RESISTANCE, JUNCTION-TO-AMBIENT (NOTE1)	$R_{\theta JA}$	140	$^\circ\text{C}/\text{W}$

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	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-4.2A$	-	53	70	m Ω
DRAIN-SOURCE ON-STATE RESISTANCE	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-4A$	-	64	85	
DRAIN-SOURCE ON-STATE RESISTANCE	$R_{DS(on)}$	$V_{GS}=-2.5V, I_D=-1A$	-	86	130	
GATE THRESHOLD VOLTAGE	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.7	-	-1.3	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}	$V_{DS}=-5V, I_D=-5A$	7	11	-	S
SOURCE-DRAIN DIODE						
MAX. DIODE FORWARD CURRENT	I_S	-	-	-	-2.2	A
DIODE FORWARD VOLTAGE	V_{SD}	$I_S=-1.0A, V_{GS}=0V$	-	-	-1	V

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

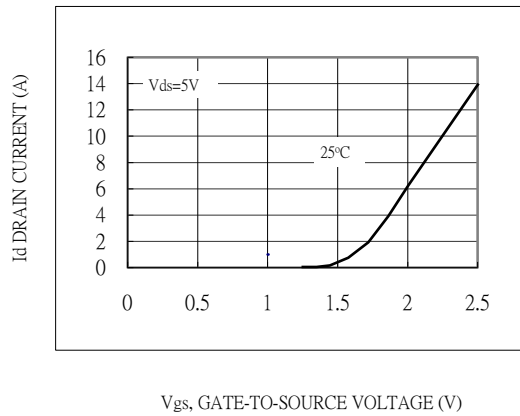


Fig.1-TRANSFER CHARACTERISTICS

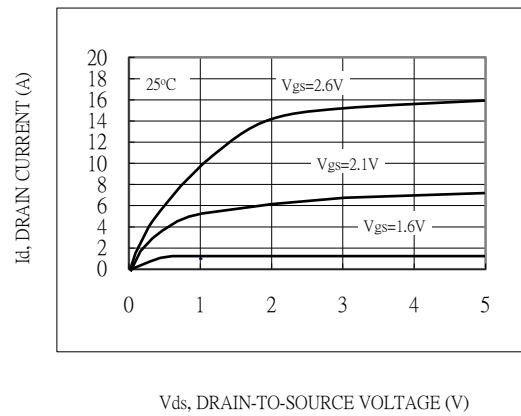


Fig.2-ON-REGION CHARACTERISTICS

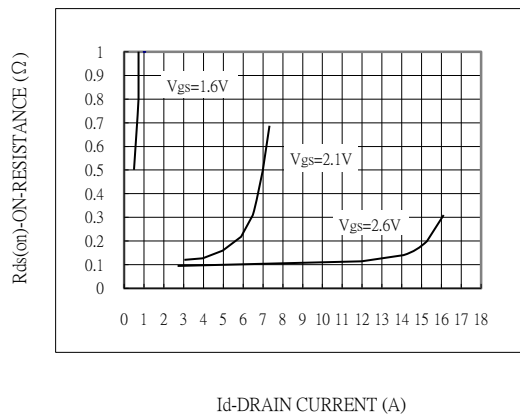


Fig.3-ON-RESISTANCE VERSUS DRAIN CURRENT

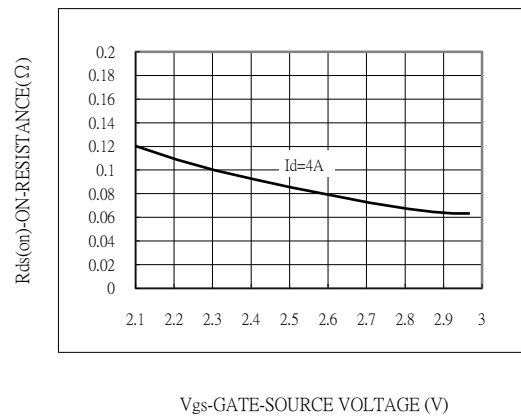


Fig.4-ON-RESISTANCE VS. GATE-TO-SOURCE VOLTAGE