PAP50TX39SX

P-Ch -100V Fast Switching MOSFET

V_{DS}=-100V, I_D=-25A, $RDS_{(ON)}$=90mΩ

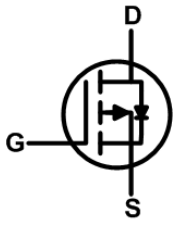
➢ General Description

This PAP50TX39SX P-Channel enhancement mode power field effect transistor is the high density trench technology and this advanced technology can provide excellent Rds(On) performance and efficiency for power switching and load switching application., this device also comply with the RoHS and Green Product requirement with full function reliability approved.

➢ Feature

- ●Super Low Gate Charge
- ●100% EAS Guaranteed
- ●Green Device Available
- ●Excellent CdV/dt effect decline
- ●Advanced high cell density Trench technology

➢ TO-252



➢ Application

- ●Switch application
- ●DC/DC Converters Power
- ●Tools

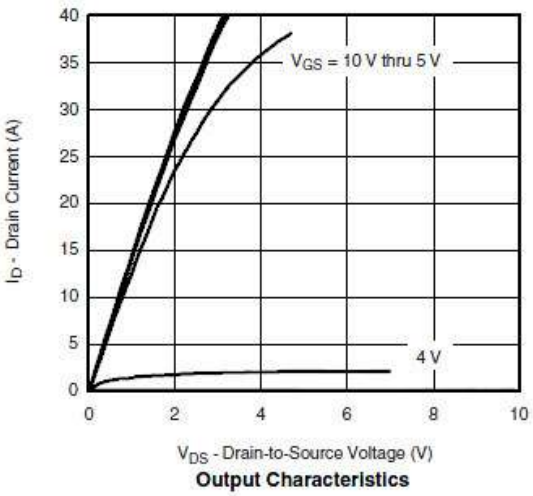
➢ Absolute Maximum Ratings

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	-100	V
Gate –Source Voltage		V_{GSS}	±20	V
Continuous Drain Current(T_J=150℃)	T_C=25℃	I_D	-25	A
	T_C=70℃		-15	
Pulsed Drain Current		I_{DM}	-50	A
Continuous Source-Drain Diode Current		I_S	-8	A
Power Dissipation	T_A=25℃	P_D	40	W
	T_A=70℃		15	
Operating Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{STG}	-55/150	℃
Thermal Resistance-Junction to Ambient		$R_{\theta JA}$	62.5	℃/W

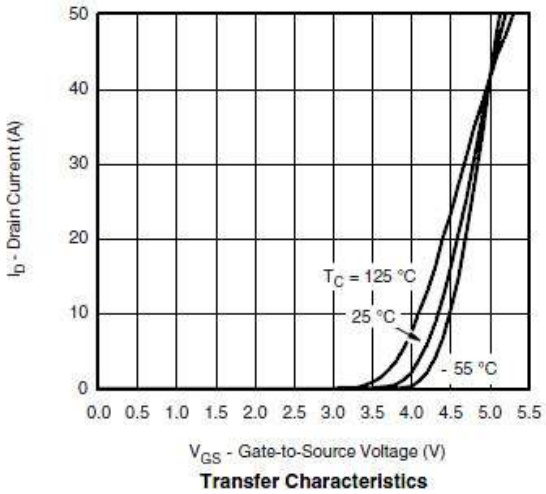
➢ Electrical Characteristics (T_J=25°C Unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D= -250uA	-100			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D= -250uA	-1.0		-2.5	
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}= ±20V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}= -80V,V_{GS}=0V			-1	uA
		V_{DS}= -80V,V_{GS}=0V T_J=85℃			-30	
On-State Drain Current	$I_{D(on)}$	V_{DS}≧ -10V,V_{GS}= -10V	-25			A
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = -10V,I_D=-12A		80	90	mΩ
		V_{GS} = -4.5V,I_D=-8A		88	100	
Forward Transconductance	g_{FS}	V_{DS}= -15V,I_D= -5.2A		19		S
Diode Forward Voltage	V_{SD}	I_S= -2A,V_{GS}=0V		-0.8	-1.3	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=-75V,V_{GS}=-10V I_D= -5.2A		85	150	nC
Gate-Source Charge	Q_{gs}			18		
Gate-Drain Charge	Q_{gd}			28		
Input Capacitance	C_{iss}	V_{DS}=-60V,V_{GS}=0V f=1MHz		4300		pF
Output Capacitance	C_{oss}			280		
Reverse Transfer Capacitance	C_{rss}			220		
Turn-On Time	$t_{d(on)}$	V_{DD}=-75V,R_L=16Ω I_D≡-4.8A,V_{GEN}=-10V R_G=6Ω		25	50	ns
	t_r			45	85	
Turn-Off Time	$t_{d(off)}$			115	200	
	t_f			65	130	

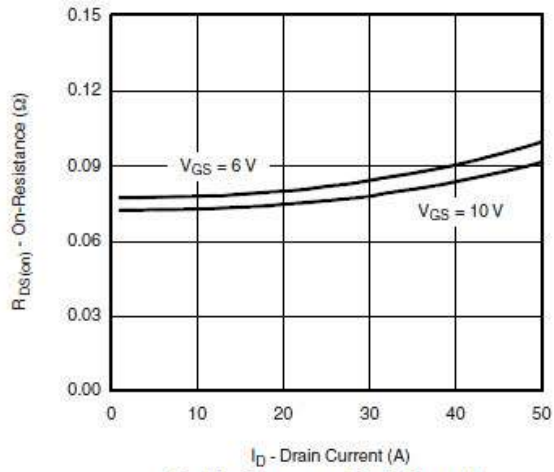
➢ Typical Characteristics



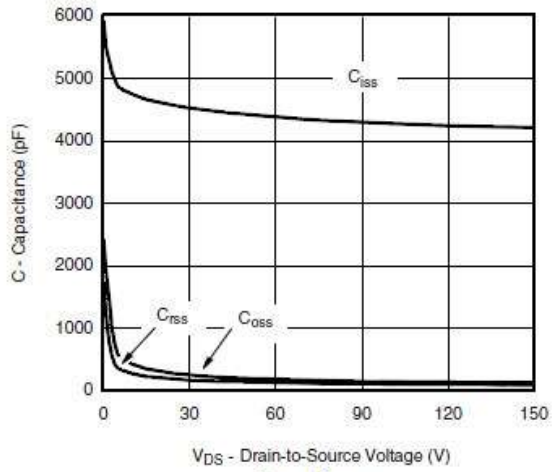
Output Characteristics



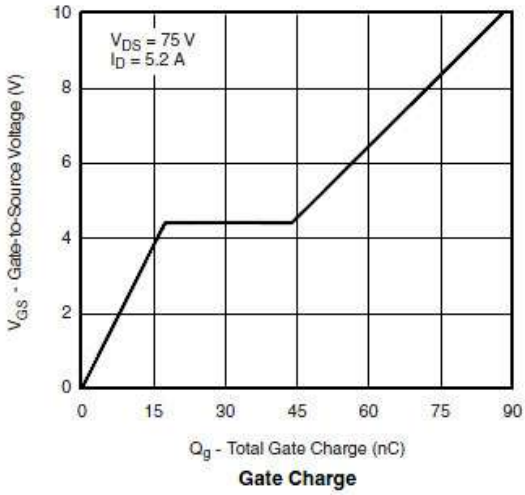
Transfer Characteristics



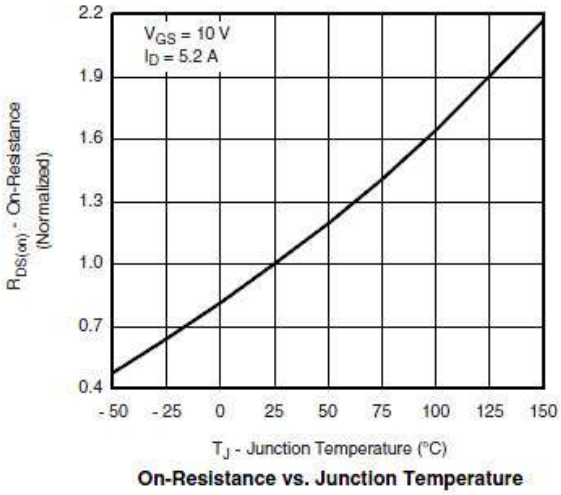
On-Resistance vs. Drain Current



Capacitance

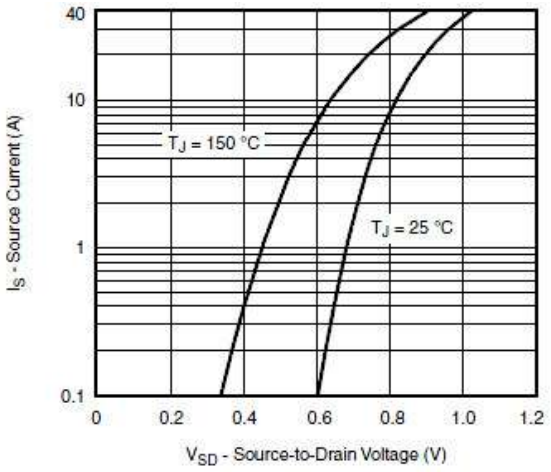


Gate Charge

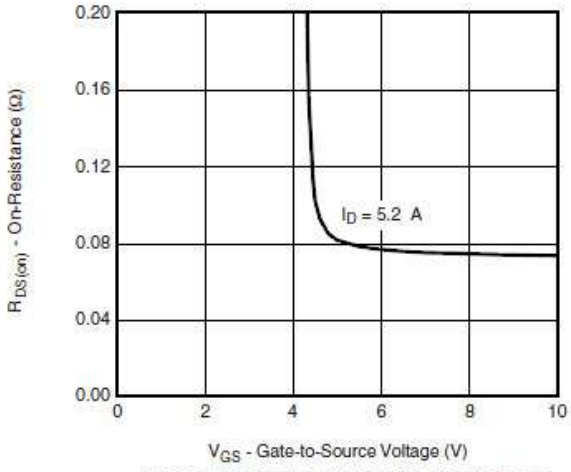


On-Resistance vs. Junction Temperature

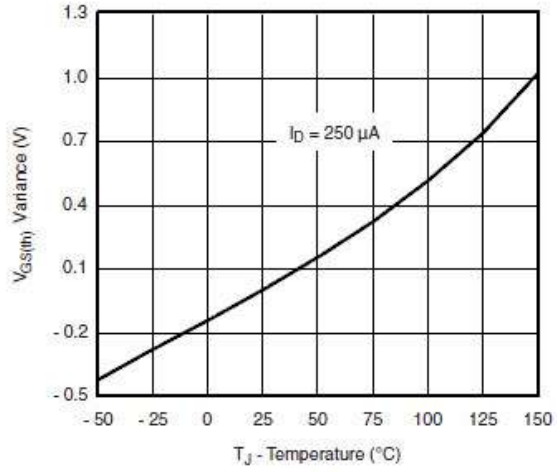
➢ Typical Characteristics



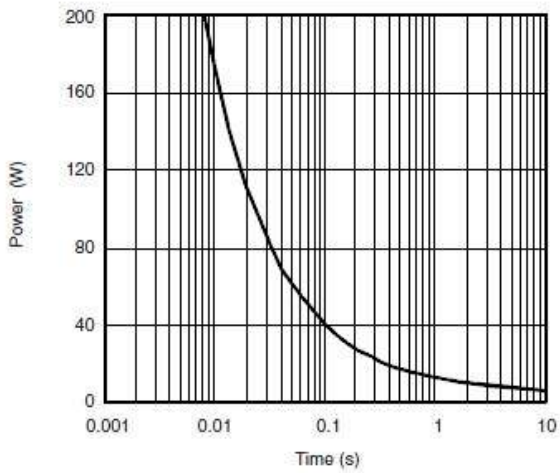
Source-Drain Diode Forward Voltage



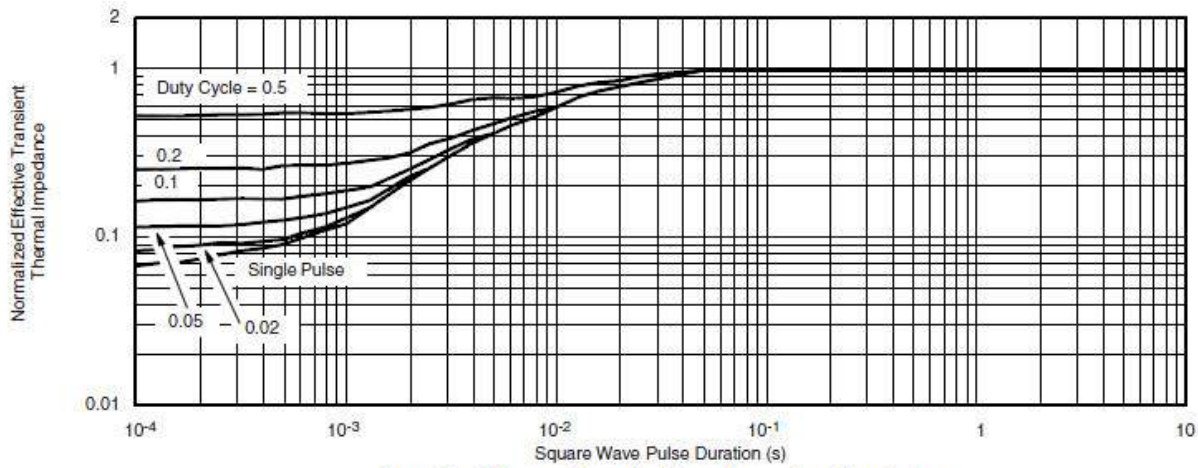
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage

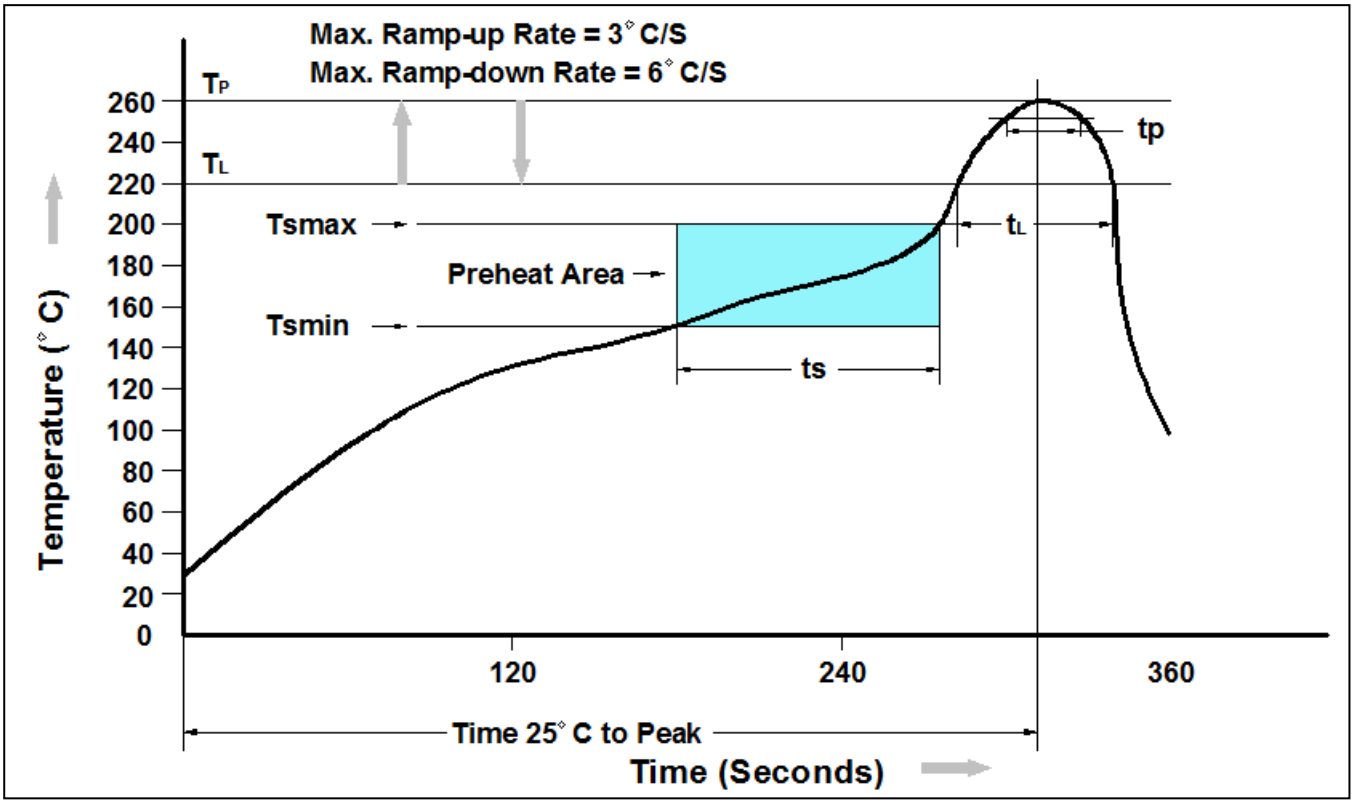


Single Pulse Power



Normalized Thermal Transient Impedance, Junction-to-Case

➢ Recommand IR Reflow Soldering Thermal Profile

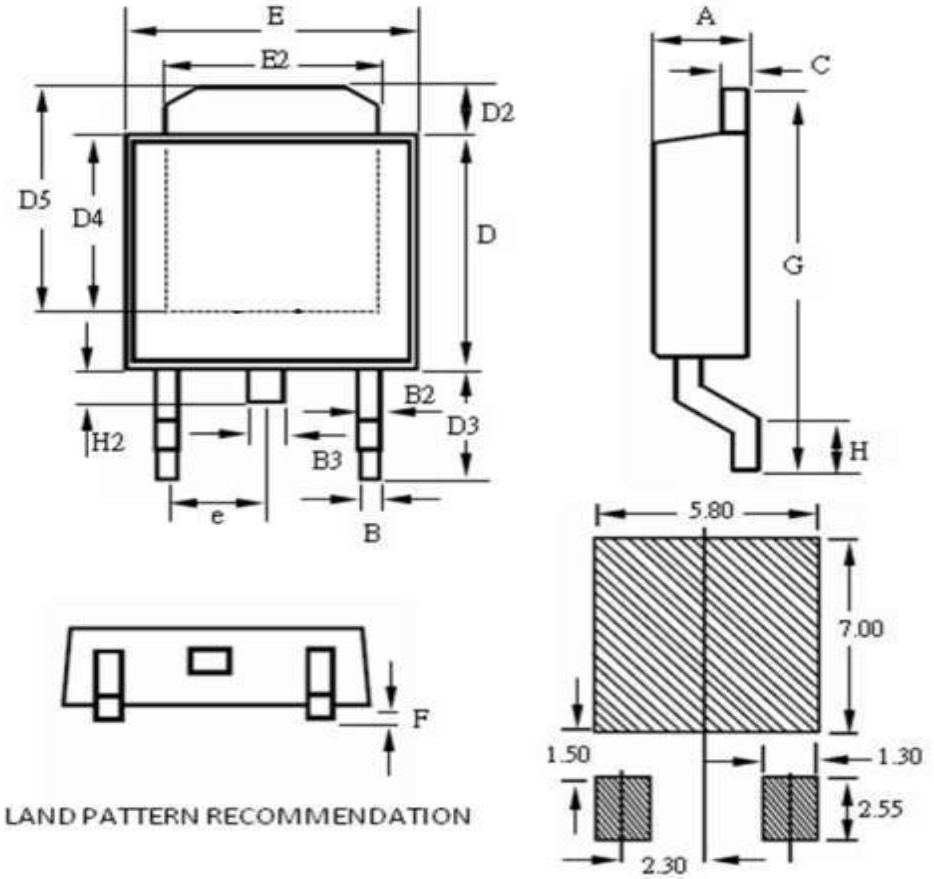


Profile Feature	Pb-Free Assembly Profile
Temperature Min. (Tsmin)	150°C
Temperature Max. (Tsmax)	200°C
Time (ts) from (Tsmin to Tsmax)	60-120 seconds
Average Ramp-up Rate (tL to tP)	3°C/second max.
Liquidous Temperature (TL)	217°C
Time (tL) Maintained Above (TL)	60 – 150 seconds
Peak Temperature	260°C +0°C / -5°C
Time (tP) within 5°C of actual Peak Temperature	30 seconds
Ramp-down Rate (TP to TL)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.

➢ Ordering Information

Part Number	Description	Quantity
PAP50TX39SX	TO-252 Reel	2500 pcs

➢ Package Information (TO-252)



SYMBOLS	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	2.10	--	2.50	0.083	--	0.098
B	0.30	--	0.89	0.012	--	0.035
B2	0.40	--	1.14	0.016	--	0.045
B3	0.60	--	1.00	0.024	--	0.039
C	0.40	--	0.89	0.016	--	0.035
D	5.30	--	6.25	0.209	--	0.246
D2	0.50	--	1.70	0.020	--	0.067
D3	2.20	--	3.40	0.087	--	0.134
D4	4.32	--	--	0.170	--	--
D5	5.21	--	--	0.205	--	--
E	6.30	--	6.73	0.248	--	0.265
E2	4.80	--	5.46	0.189	--	0.215
F	0.00	--	0.30	0.000	--	0.012
G	9.20	--	10.41	0.362	--	0.410
H	0.90	--	1.95	0.035	--	0.077
H2	0.50	--	1.10	0.020	--	0.043
e	--	2.30	--	--	0.091	--

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