Elektronische Bauelemente

STT3457P

-4 A, -30 V, $R_{DS(ON)}$ 60 mΩ
P-Channel Enhancement Mode MOSFET

RoHS Compliant Product
A suffix of "-C" specifies halogen and lead-free

DESCRIPTION

These miniature surface mount MOSFETs utilize a high cell density trench process to provide Low $R_{DS(on)}$ and to ensure minimal power loss and heat dissipation. Typical applications are DC-DC converters and power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

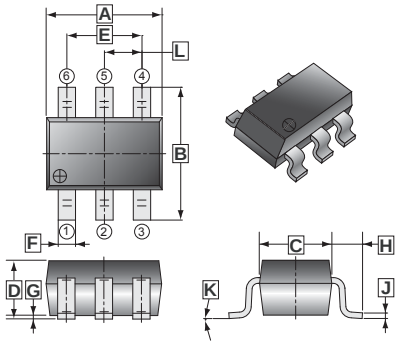
FEATURES

- Low $R_{DS(on)}$ provides higher efficiency and extends battery life.
- Low thermal impedance copper leadframe TSOP-6 saves board space.
- Fast switching speed
- High performance trench technology

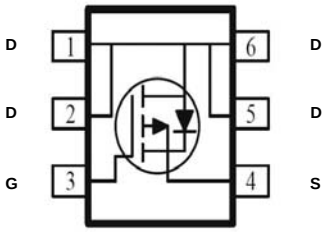
PACKAGE INFORMATION

Package	MPQ	LeaderSize
TSOP-6	3K	7' inch

TSOP-6



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	0	0.10
B	2.60	3.00	H	0.60 REF.	
C	1.40	1.80	J	0.12 REF.	
D	1.10 MAX.		K	0°	10°
E	1.90 REF.		L	0.95 REF.	
F	0.30	0.50			



ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1]	T_A= 25°C	I_D	-4	A
	T_A= 70°C		-3.2	
Pulsed Drain Current [2]		I_{DM}	-20	A
Continuous Source Current (Diode Conduction) [1]		I_S	-1.7	A
Power Dissipation [1]	T_A= 25°C	P_D	2	W
	T_A= 70°C		1.3	
Operating Junction and Storage Temperature Range		Tj, Tstg	-55 ~ 150	°C
Thermal Resistance Ratings				
Maximum Junction to Ambient [1]	t ≤ 5 sec	$R_{\theta JA}$	62.5	°C / W
	Steady State		110	

Notes:
1. Surface Mounted on 1" x 1" FR4 Board.
2. Pulse width limited by maximum junction temperature.

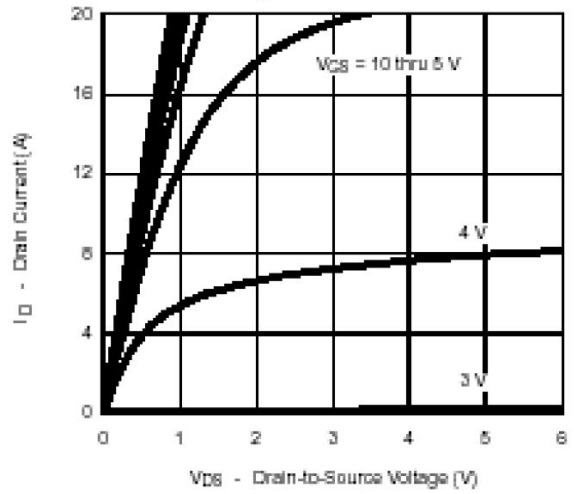
ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static						
Gate-Threshold Voltage	$V_{GS(th)}$	-1	-	-	V	V_{DS}= V_{GS}, I_D= 250μA
Gate-Body Leakage	I_{GSS}	-	-	±100	nA	V_{DS}= 0V, V_{GS}= ±8V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	-1	μA	V_{DS}= -16V, V_{GS}= 0V
		-	-	-5		V_{DS}= -20V, V_{GS}= 0V, T_J= 55°C
On-State Drain Current [1]	$I_{D(on)}$	-20	-	-	A	V_{DS} = -5V, V_{GS}= -4.5V
Drain-Source On-Resistance [1]	$R_{DS(ON)}$	-	-	60	mΩ	V_{GS}= -4.5V, I_D= -4.0A,T_J= 55°C
		-	-	50		V_{GS}= -10V, I_D= -4.0A
		-	-	75		V_{GS}= -4.5V, I_D= -3.4A
Forward Transconductance [1]	g_{fs}	-	10	-	S	V_{DS}= -5V, I_D= -3.4A
Diode Forward Voltage	V_{SD}	-	-0.8	-	V	I_S= 1.3A, V_{GS}= 0V
Dynamic [2]						
Total Gate Charge	Q_g	-	6.4	-	nC	V_{DS}= -20V, V_{GS}= -5V, I_D= -4.0A
Gate-Source Charge	Q_{gs}	-	2	-		
Gate-Drain Charge	Q_{gd}	-	3.8	-		
Turn-on Delay Time	$T_{d(on)}$	-	7	-	nS	V_{DD}= -20V, V_{GEN}= -10V, R_L= 6Ω, I_D= -1A
Rise Time	T_r	-	10	-		
Turn-off Delay Time	$T_{d(off)}$	-	30	-		
Fall Time	T_f	-	22	-		

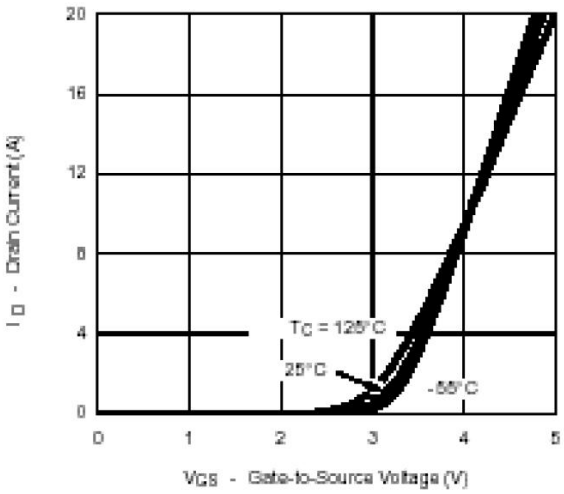
Notes:
1. Pulse test：PW ≦ 300 us duty cycle ≦ 2%.
2. Guaranteed by design, not subject to production testing.

CHARACTERISTICS CURVE

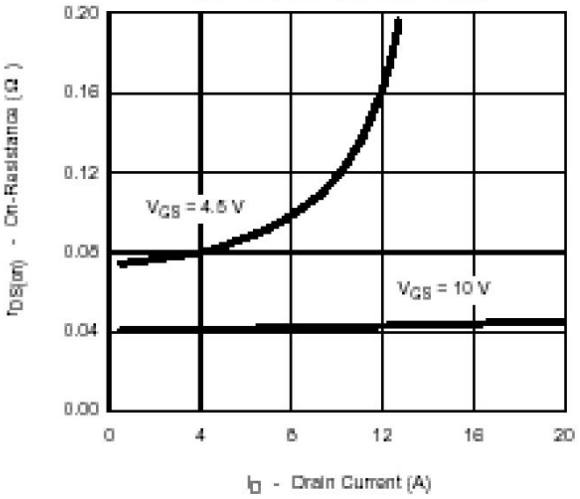
Output Characteristics



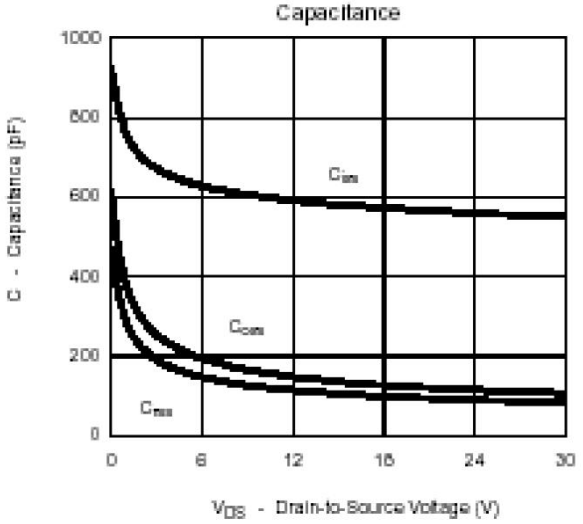
Transfer Characteristics



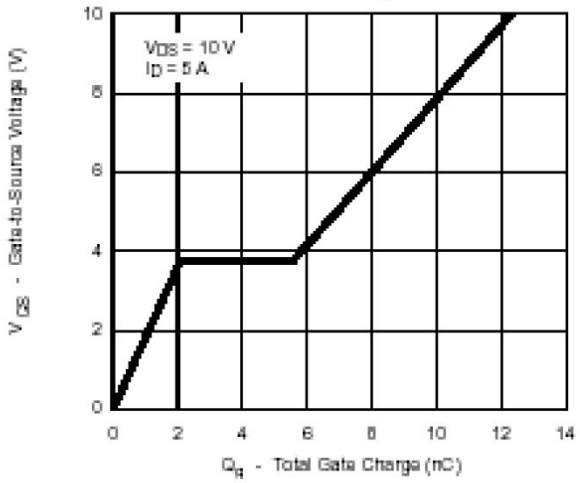
On-Resistance vs. Drain Current



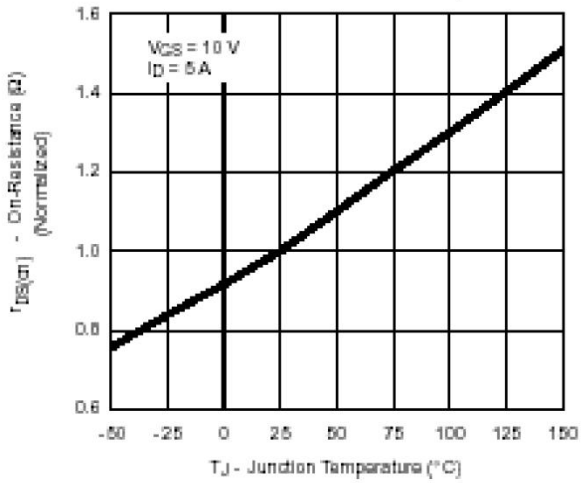
Capacitance



Gate Charge

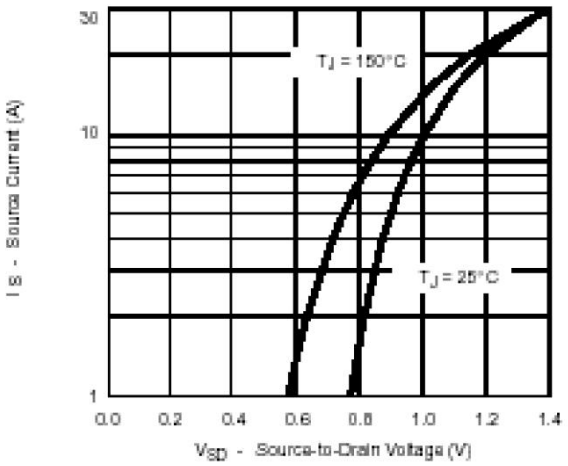


On-Resistance vs. Junction Temperature

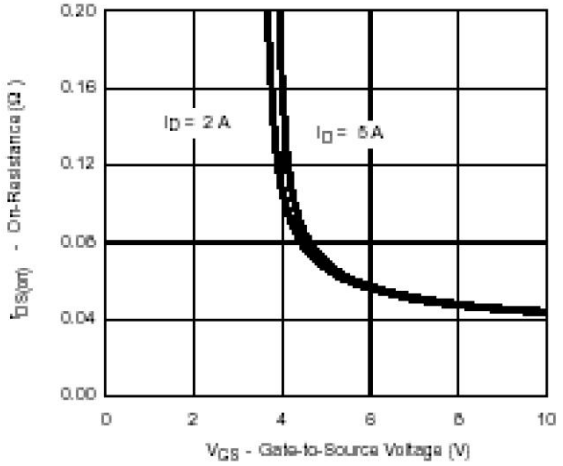


CHARACTERISTICS CURVE

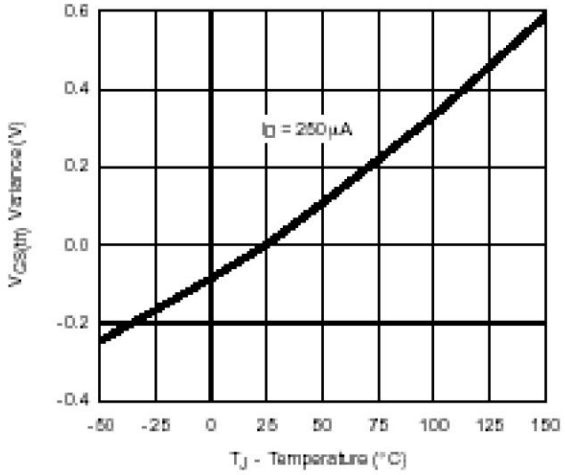
Source-Drain Diode Forward Voltage



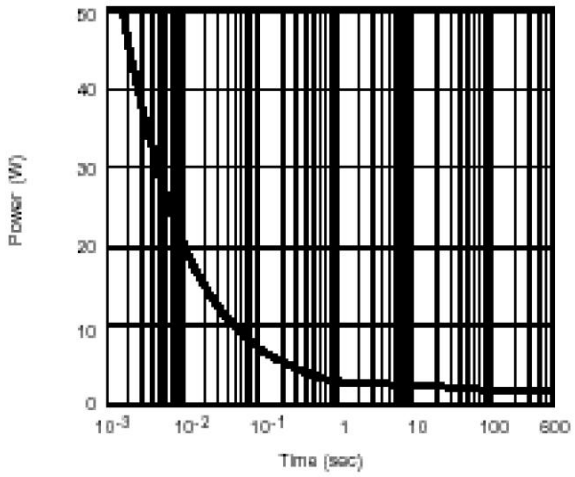
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



Single Pulse Power



Normalized Thermal Transient Impedance, Junction-to-Ambient

