

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

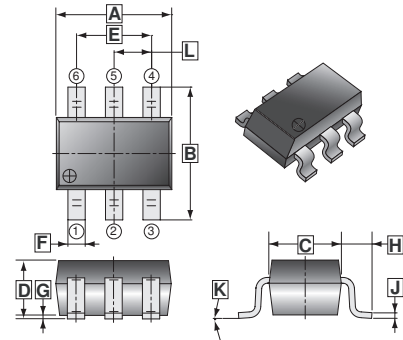
Key Features:

- Low rDS(on) trench technology
- Low thermal impedance
- Fast switching speed

Typical Applications:

- Battery Powered Instruments
- Portable Computing
- Mobile Phones
- Fast switch
- GPS Units and Media Players

TSOP-6



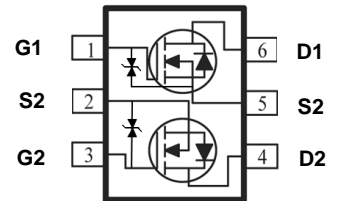
PACKAGE INFORMATION

Package	MPQ	Leader Size
TSOP-6	3K	7 inch

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			



ESD
Protection Diode
2KV



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

Parameter	Symbol	Ratings	Unit	
Drain-Source Voltage	V _{DS}	20	V	
Gate-Source Voltage	V _{GS}	±8	V	
Continuous Drain Current ¹	I _D	T _A = 25°C	6	A
		T _A = 100°C	3.6	
Pulsed Drain Current ²	I _{DM}	22	A	
Continuous Source Current (Diode Conduction) ¹	I _S	1	A	
Power Dissipation ¹	P _D	T _A = 25°C	0.83	W
		T _A = 100°C	0.3	
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55 ~ 150	°C	
Thermal Resistance Ratings				
Maximum Junction to Ambient ¹	R _{θJA}	t ≤ 10 sec	110	°C / W
		Steady State	150	

Notes

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

ELECTRICAL CHARACTERISTICS

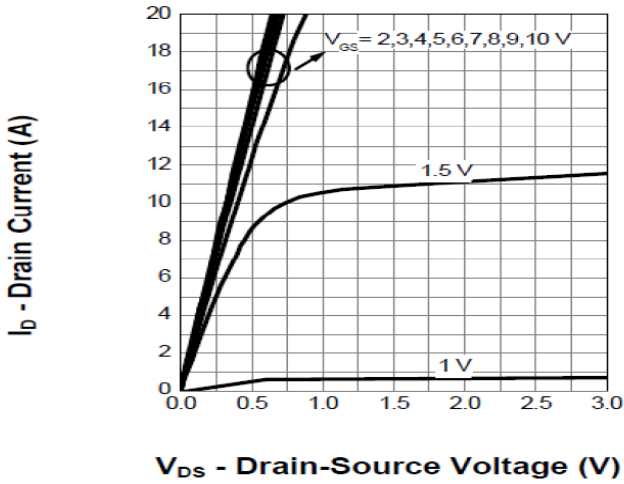
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Gate- Source Threshold Voltage	$V_{GS(th)}$	0.4	-	-	V	$V_{DS}=V_{GS}$, $I_D=250\mu A$
Gate-Body Leakage	I_{GSS}	-	-	± 10	nA	$V_{DS}=0$, $V_{GS}=\pm 8V$
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	$V_{DS}=16V$, $V_{GS}=0 V$
		-	-	30		$V_{DS}=16V$, $V_{GS}=0 V$, $T_J=85^\circ C$
On-State Drain Current	$I_{D(on)}$	10	-	-	A	$V_{DS}=5V$, $V_{GS}=4.5V$
Drain-Source On-Resistance	$R_{DS(ON)}$	-	-	20	m Ω	$V_{GS}=4.5V$, $I_D=6A$
		-	-	28		$V_{GS}=2.5V$, $I_D=5A$
Forward Transconductance	g_{fs}	-	10	-	S	$V_{DS}=15V$, $I_D=6A$
Diode Forward Voltage	V_{SD}	-	0.7	-	V	$I_S=1A$, $V_{GS}=0V$
Dynamic						
Total Gate Charge	Q_g	-	13.5	-	nC	$V_{DS}=10V$, $V_{GS}=4.5V$, $I_D=6A$
Gate-Source Charge	Q_{gs}	-	0.9	-		
Gate-Drain Charge	Q_{gd}	-	5.4	-		
Turn-on Delay Time	$T_{d(on)}$	-	6	-	nS	$V_{DD}=10V$, $V_{GEN}=4.5V$, $R_{GEN}=6\Omega$, $R_L=10\Omega$, $I_D=1A$
Rise Time	T_r	-	12	-		
Turn-off Delay Time	$T_{d(off)}$	-	65	-		
Fall Time	T_f	-	35	-		
Input Capacitance	C_{iss}	-	680	-	pF	$V_{DS}=10 V$, $V_{GS}=0 V$, $f=1 MHz$
Output Capacitance	C_{oss}	-	144	-		
Reverse Transfer Capacitance	C_{rss}	-	137	-		

Notes

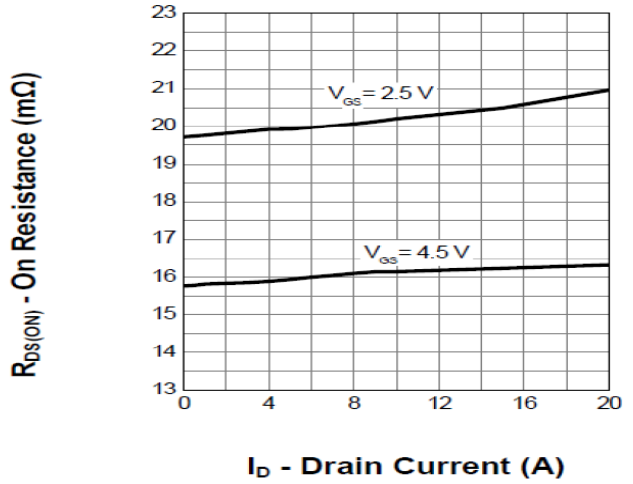
1. Pulse test : $PW \leq 300\mu s$ duty cycle $\leq 2\%$.
2. Guaranteed by design, not subject to production testing.

Typical Electrical Characteristics

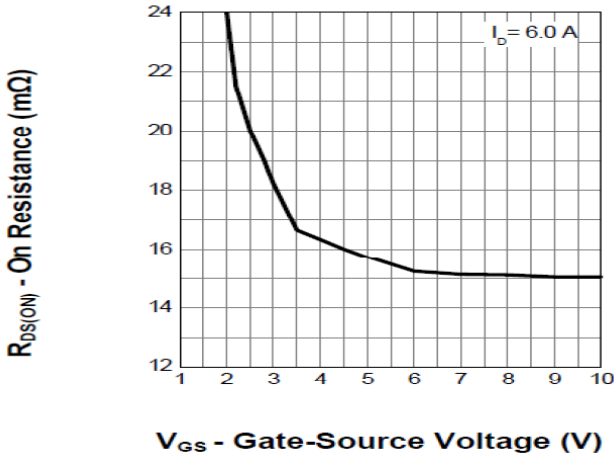
Output Characteristics



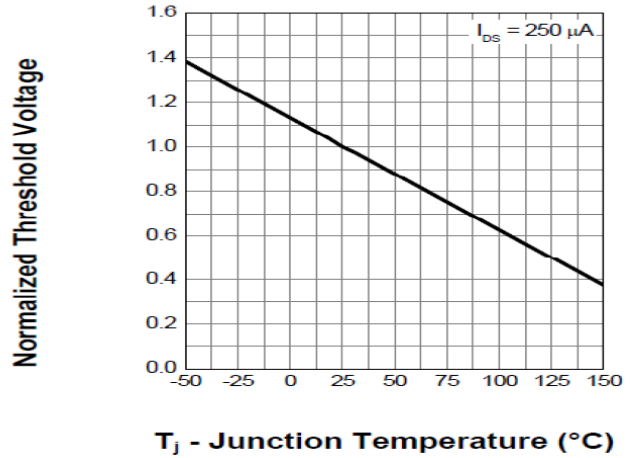
Drain-Source On Resistance



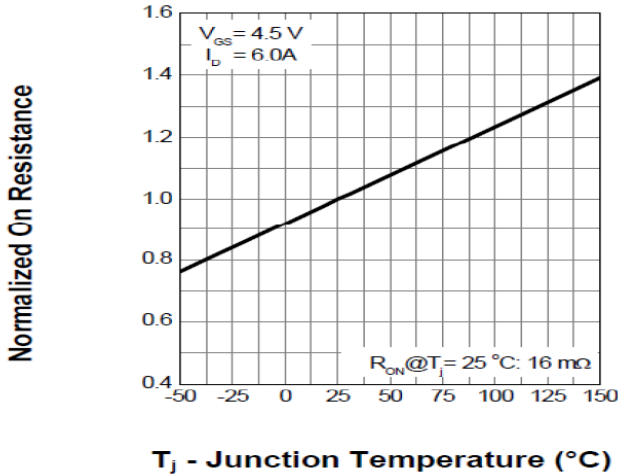
Transfer Characteristics



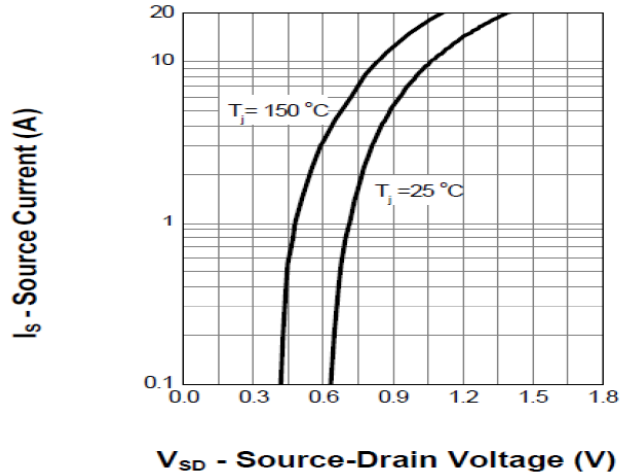
Gate Threshold Voltage



Drain-Source On Resistance



Source-Drain Diode Forward



Typical Electrical Characteristics

