Elektronische Bauelemente

SSP1027

-3.5 A, -20 V, RDS(ON) 97 mΩ
P-Channel Enhancement Mode Mos.FET

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

DESCRIPTION

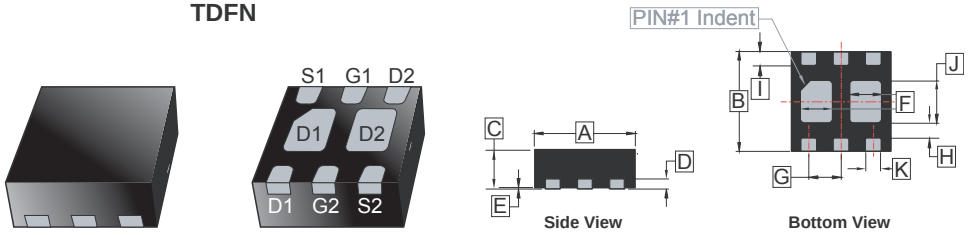
The SSP1027 utilized advance processing techniques to achieve the lowest possible on-resistance, extremely efficient and cost-effectiveness device. The SSP1027 is universally used for all commercial-industrial applications.

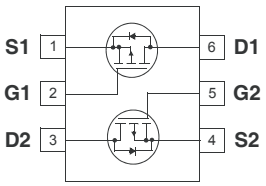
FEATURES

- Low On-Resistance
- Low Gate Charge

PACKAGE DIMENSIONS

TDFN





REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.900	2.100	F	0.520	0.720
B	1.900	2.100	G	0.650 TYP	
C	0.650	0.800	H	0.200 MIN	
			I	0.150	0.350
D	0.203 REF		J	0.900	1.100
E	0.000	0.050	K	0.250	0.350

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current[3]	I_D @T_A=25℃ I_D @T_A=70℃	-3.5 -2.8	A
Pulsed Drain Current[1]	I_{DM}	-15	A
Power Dissipation	P_D @T_A=25℃	0.7	W
Linear Derating Factor		0.006	W/℃
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 ~ +150	℃

THERMAL DATA

Parameter	Symbol	Ratings	Unit
Thermal Resistance Junction-ambient[3] (Max)	$R_{\theta JA}$	98	℃/W

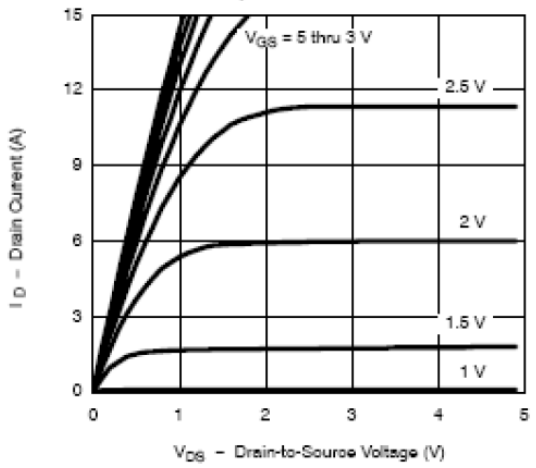
ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	-20	-	-	V	V_{GS} = 0, I_D = -250 uA
Gate Threshold Voltage	$V_{GS(th)}$	-0.35	-	-0.8	V	V_{DS} = V_{GS}, I_D = -250 uA
Gate Leakage Current	I_{GSS}	-	-	±100	nA	V_{DS} = 0 V, V_{GS} = ±12 V
Drain-Source Leakage Current (Tj=25℃)	I_{DSS}	-	-	-1	uA	V_{DS} = -20 V, V_{GS} = 0
Drain-Source Leakage Current (Tj=70℃)		-	-	-5		V_{DS} = -20 V, V_{GS} = 0, T_J = 55°C
On-State Drain Current	$I_{D(on)}$	-6	-	-	A	V_{DS} ≦ -5 V, V_{GS} = -4.5 V
Forward Transconductance	gfs	-	6	-	S	V_{DS} = -5 V, I_D = -2.8 A
Diode Forward Voltage	V_{SD}	-	-0.8	-0.2	V	I_S = -1.5 A, V_{GS} = 0 V
Drain-Source On-Resistance	$R_{DS(ON)}$	-	76	95	mΩ	V_{GS} = -4.5 V, I_D = -3.4 A
		-	97	120		V_{GS} = -2.5 V, I_D = -2.4 A
		-	123	145		V_{GS} = -1.8 V, I_D = -1.7 A
Dynamic						
Total Gate Charge[2]	Q_g	-	4.8	8	nC	I_D = -2.8 A V_{DS} = -6 V V_{GS} = -4.5 V
Gate-Source Charge	Q_{gs}	-	1.0	-		
Gate-Drain Charge	Q_{gd}	-	1.0	-		
Turn-on Time	$T_{d(on)}$	-	10	16	nS	V_{DD} = -6 V I_D = -1 A V_{GEN} = -4.5 V R_G = 6 Ω R_L = 6 Ω
Rise Time	T_r	-	13	23		
Turn-off Time	$T_{d(off)}$	-	18	25		
Fall Time	T_f	-	15	20		
Input Capacitance	Ciss	-	485	-	pF	V_{GS} = 0 V V_{DS} = -6 V f = 1.0 MHz
Output Capacitance	Coss	-	85	-		
Reverse Transfer Capacitance	Crss	-	40	-		

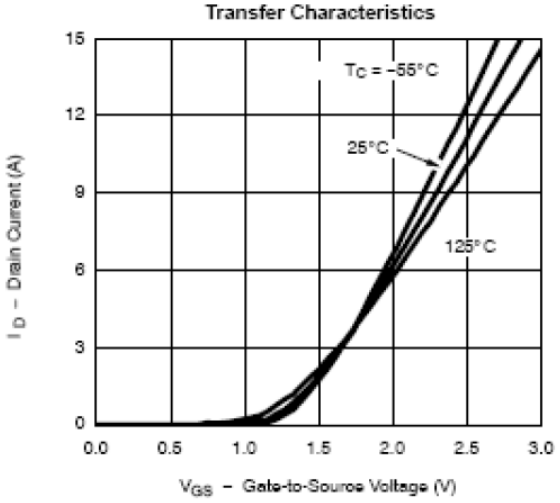
Notes: 1. Pulse width limited by maximum junction temperature.
2. Pulse width≦300us, dutycycle≦2%.
3. Surface mounted on 1 in^2 copper pad of FR4 board; 180 °C/W when mounted on minimum copper pad.

CHARACTERISTIC CURVES

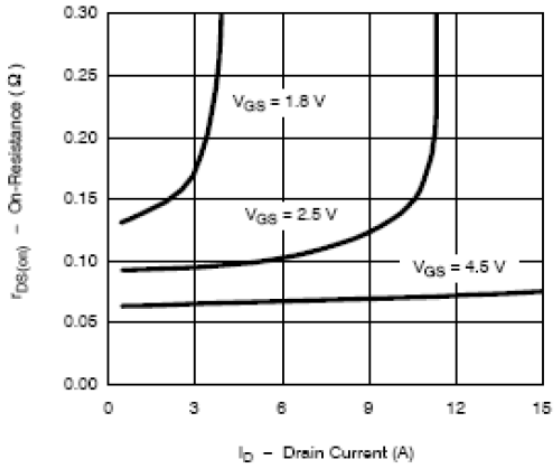
Output Characteristics



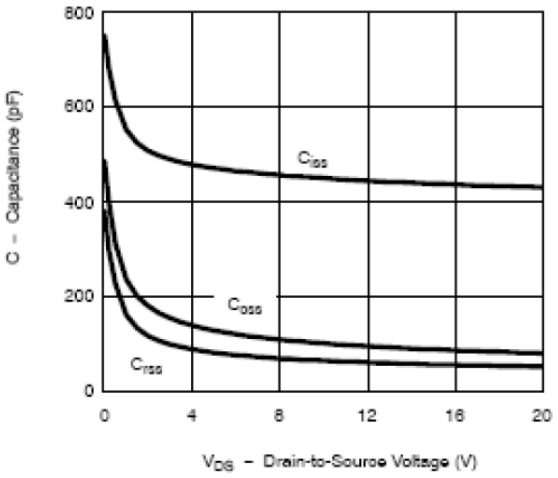
Transfer Characteristics



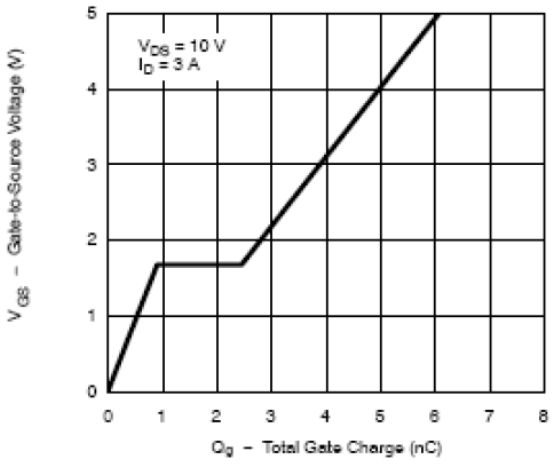
On-Resistance vs. Drain Current



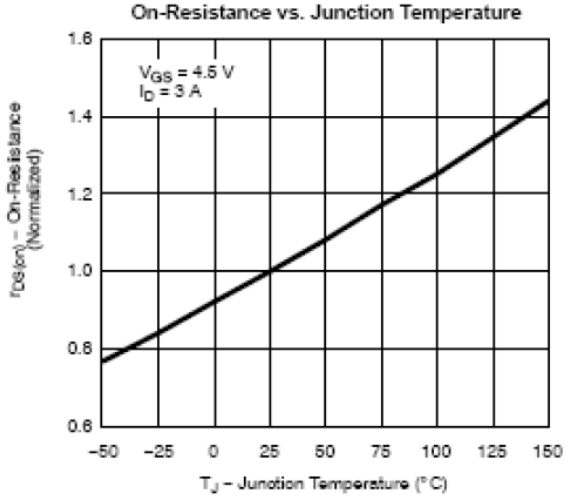
Capacitance



Gate Charge

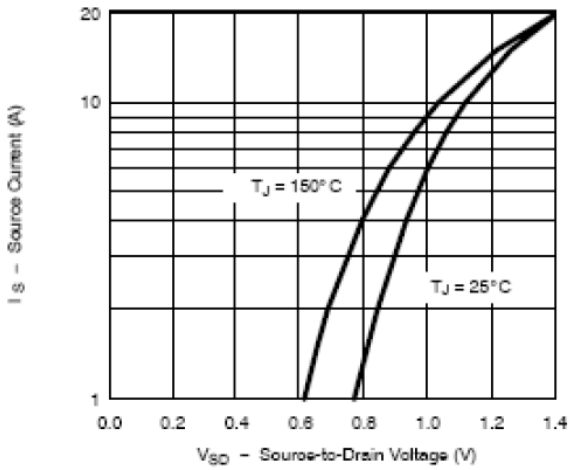


On-Resistance vs. Junction Temperature

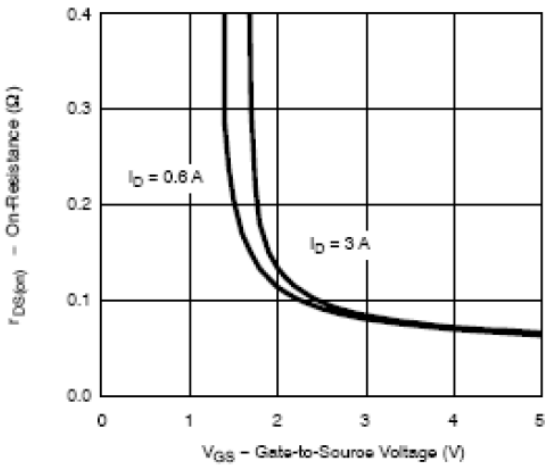


CHARACTERISTIC CURVES (con'd)

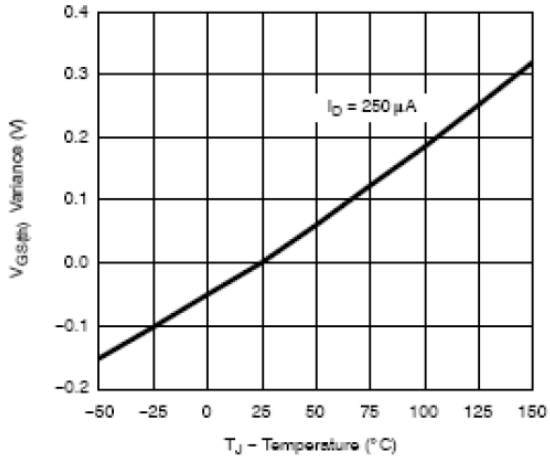
Source-Drain Diode Forward Voltage



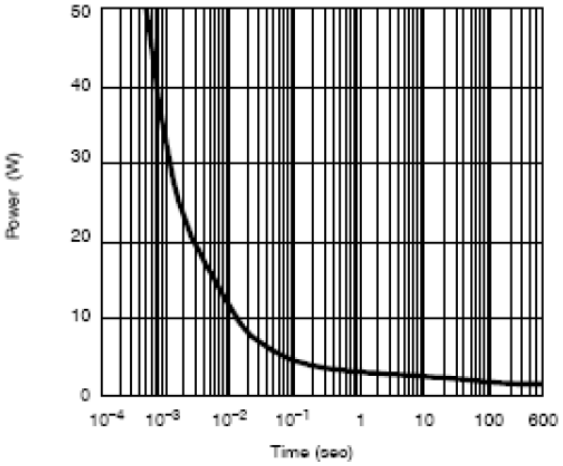
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



Single Pulse Power



Normalized Thermal Transient Impedance, Junction-to-Foot