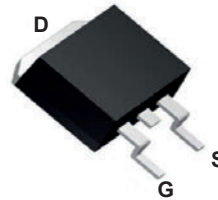
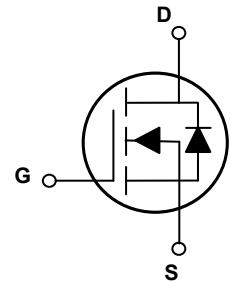


Main Product Characteristics

BV_{DSS}	800V
$R_{DS(ON)}$	115m Ω (Typ.)
I_D	27A



TO-263



Schematic Diagram

Features and Benefits

- Advanced MOSFET process technology
- Ideal for high efficiency switched mode power supplies
- Low on-resistance with low gate charge
- Fast switching and reverse body recovery



Description

The GSJT8027 utilizes the latest techniques to achieve high cell density and low on-resistance. These features make this device extremely efficient and reliable for use in high efficiency switch mode power supplies and a wide variety of other applications.

Absolute Maximum Ratings (T_c=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage (V _{GS} =0V)	V _{DS}	800	V
Gate-Source Voltage (V _{DS} =0V) AC (F>1Hz)	V _{GS}	±30	V
Gate-Source Voltage (V _{DS} =0V) DC		±20	V
Continuous Drain Current at T _c =25°C	I _D	27	A
Continuous Drain Current at T _c =100°C		18.9	A
Pulsed Drain Current ¹	I _{DM}	81	A
Maximum Power Dissipation (T _c =25°C)	P _D	316	W
Derate Above 25°C		2.1	W/°C
Avalanche Current ²	I _{AS}	4	A
Drain Source Voltage Slope, V _{DS} ≤480V	dv/dt	50	V/ns
Reverse Diode dv/dt, V _{DS} ≤480V, I _{SD} <I _D	dv/dt	50	V/ns
Max. Thermal Resistance, Junction-to-Case	R _{θJC}	0.27	°C/W
Max. Thermal Resistance, Junction-to-Ambient	R _{θJA}	62	°C/W
Operating Junction and Storage Temperature Range	T _J /T _{STG}	-55 to +175	°C


Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
On / Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=1mA$	800	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=800V, V_{GS}=0V, T_C=25^\circ\text{C}$	-	-	10	μA
Zero Gate Voltage Drain Current		$V_{DS}=800V, V_{GS}=0V, T_C=125^\circ\text{C}$	-	-	500	
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=1mA$	3.5	4.2	5.0	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=13A$	-	115	140	m Ω
Dynamic and Switching Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=50V, V_{GS}=0V, F=1.0\text{MHz}$	-	3300	3800	μF
Output Capacitance	C_{oss}		-	116	-	
Reverse Transfer Capacitance	C_{rss}		-	2.9	-	
Total Gate Charge	Q_g	$V_{DS}=600V, I_D=14A, V_{GS}=10V$	-	61	66	nC
Gate-Source Charge	Q_{gs}		-	16.6	-	
Gate-Drain Charge	Q_{gd}		-	17.6	-	
Gate Plateau Voltage	V_{gp}		-	5.1	-	V
Intrinsic Gate Resistance	R_g	$F=1\text{MHz}$ open drain	-	2.0	-	Ω
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=380V, I_D=14A, R_G=1.7\Omega, V_{GS}=10V$	-	16	-	nS
Turn-on Rise Time	t_r		-	6	-	
Turn-Off Delay Time	$t_{d(off)}$		-	60	-	
Turn-Off Fall Time	t_f		-	3	-	
Source-Drain Ratings and Characteristics						
Source-Drain Current (Body Diode)	I_{SD}	$T_C=25^\circ\text{C}$	-	-	27	A
Pulsed Source-Drain Current (Body Diode)	I_{SDM}		-	-	81	A
Forward On Voltage	V_{SD}	$T_J=25^\circ\text{C}, I_{SD}=27A, V_{GS}=0V$	-	0.9	1.2	V
Reverse Recovery Time	T_{rr}	$T_J=25^\circ\text{C}, I_F=14A, di/dt=100A/\mu\text{s}$	-	180	-	nS
Reverse Recovery Charge	Q_{rr}		-	1.30	-	μC
Peak Reverse Recovery Current	I_{rrm}		-	14	-	A

Note:

1. Repetitive rating: Pulse width limited by maximum junction temperature.
2. $T_J=25^\circ\text{C}, V_{DD}=50V, V_G=10V, R_G=25\Omega$.

Typical Electrical and Thermal Characteristic Curves

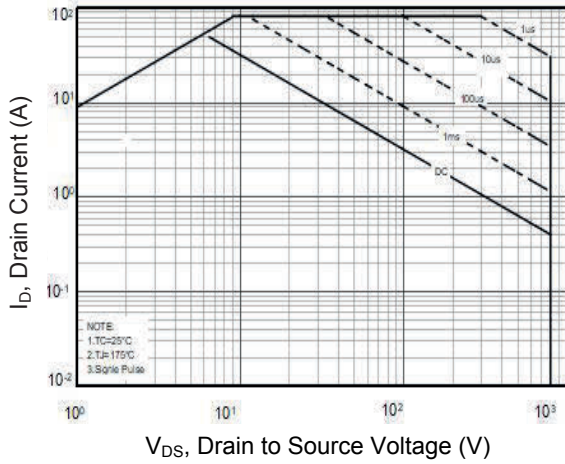


Figure 1. Safe Operation Area

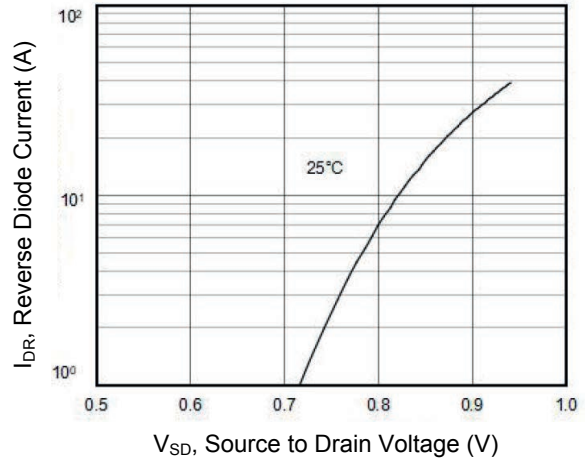


Figure 2. Source-Drain Diode Forward Voltage

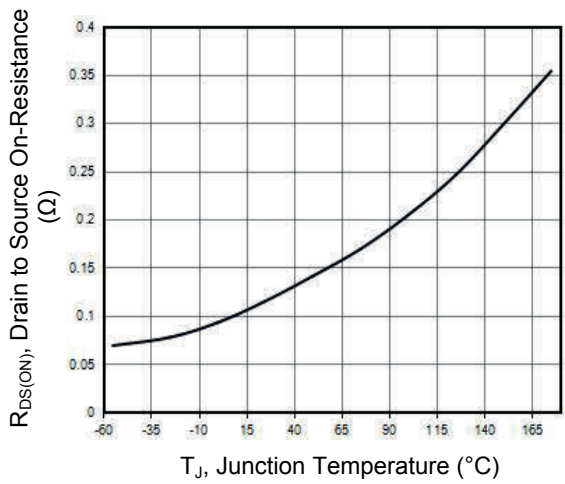


Figure 3. $R_{DS(ON)}$ vs. Junction Temperature

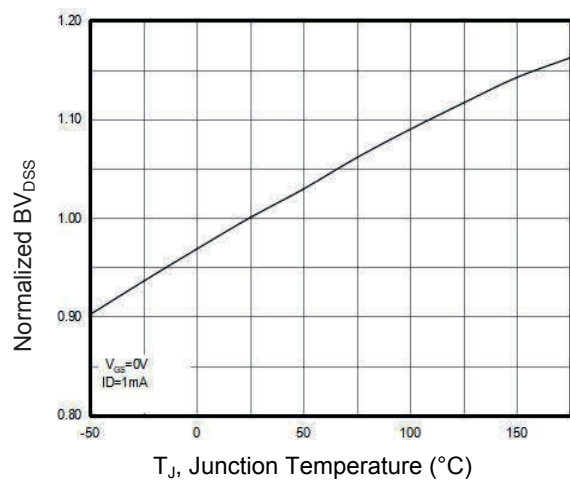


Figure 4. BV_{DSS} vs. T_J

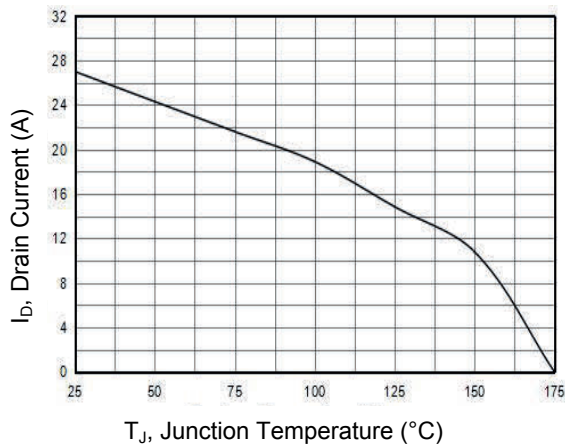


Figure 5. Maximum I_D vs. T_J

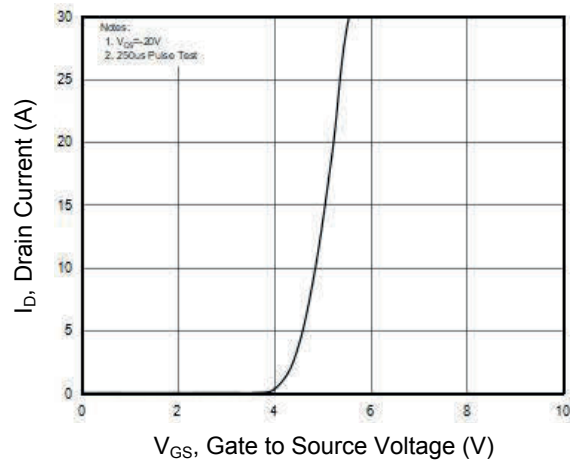


Figure 6. Transfer Characteristics

Typical Electrical and Thermal Characteristic Curves

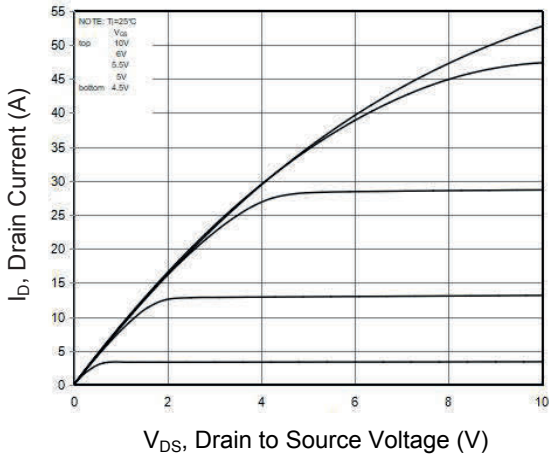


Figure 7. Output Characteristics

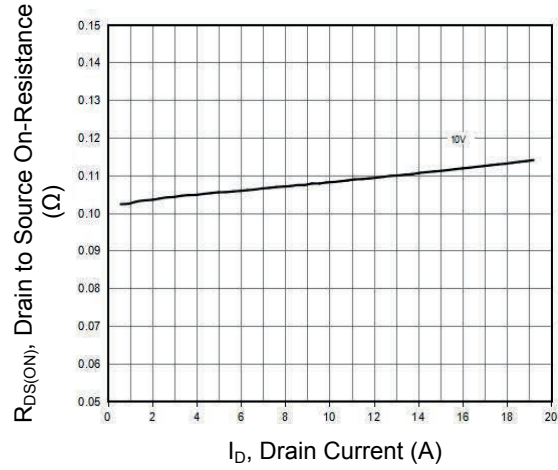


Figure 8. Static Drain-Source On Resistance

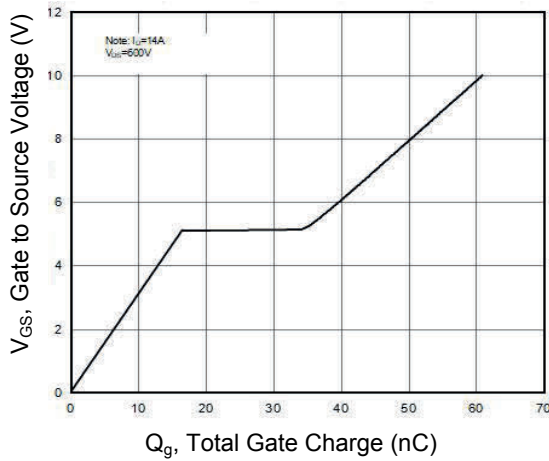


Figure 9. Gate Charge Waveforms

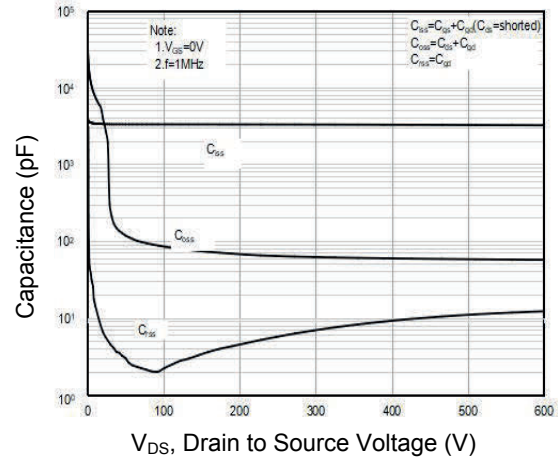
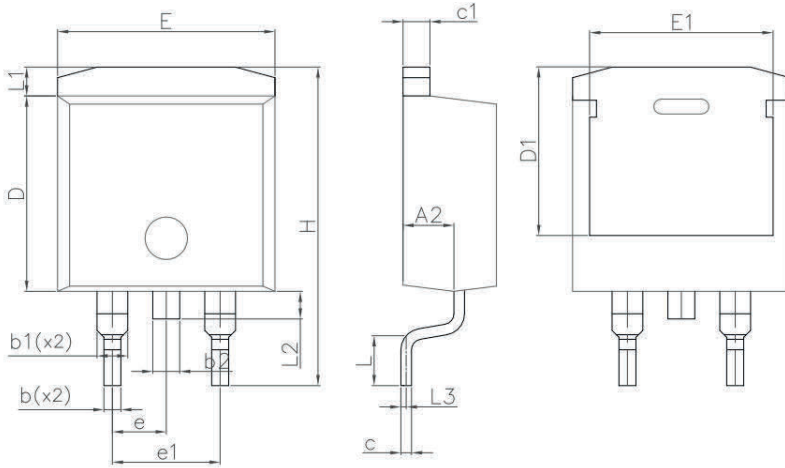


Figure 10. Capacitance

Package Outline Dimensions (TO-263)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.20	4.60	0.165	0.181
A1	0.00	0.25	0.00	0.010
A2	2.20	2.60	0.087	0.102
b	0.70	0.90	0.028	0.035
b1	1.20	1.75	0.047	0.069
b2	1.17	1.37	0.046	0.054
c	0.40	0.60	0.016	0.024
c1	1.15	1.40	0.045	0.055
D	9.10	9.30	0.358	0.366
D1	7.63	8.23	0.300	0.324
E	10.05	10.45	0.396	0.411
E1	8.35	8.95	0.329	0.352
e	2.54 BSC		0.100 BSC	
e1	5.08 BSC		0.200 BSC	
H	14.61	15.88	0.575	0.625
L	1.78	2.79	0.070	0.110
L1	1.36 REF		0.054 REF	
L2	1.30 REF		0.05 1REF	

Order Information

Device	Package	Marking	Carrier	Quantity
GSJT8027	TO-263	JT8027	Tape & Reel	800 pcs / Reel

For more information, please contact us at: inquiry@goodarksemi.com