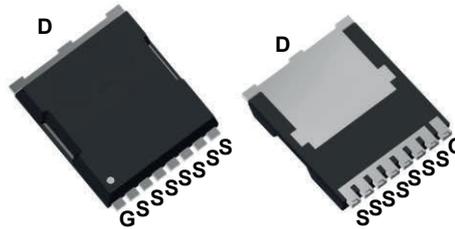
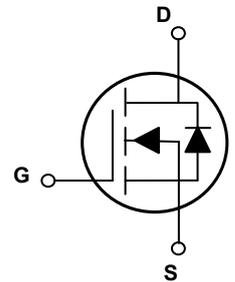


### Main Product Characteristics

$V_{DS}$	150V
$R_{DS(ON)}$	4m $\Omega$ (Max.)
$I_D$	265A



TOLL



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 GSFTL15265 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 supply and a wide variety of other applications.

### Absolute Maximum Ratings ( $T_C=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	150	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current-Continuous	$I_D$	265	A
Drain Current-Continuous ( $T_C=100^{\circ}\text{C}$ )		186	A
Pulsed Drain Current	$I_{DM}$	1060	A
Maximum Power Dissipation	$P_D$	618	W
Derating Factor		4.0	W/ $^{\circ}\text{C}$
Single Pulse Avalanche Energy <sup>1</sup>	$E_{AS}$	1697	mJ
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	0.25	$^{\circ}\text{C}/\text{W}$
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 To +175	$^{\circ}\text{C}$

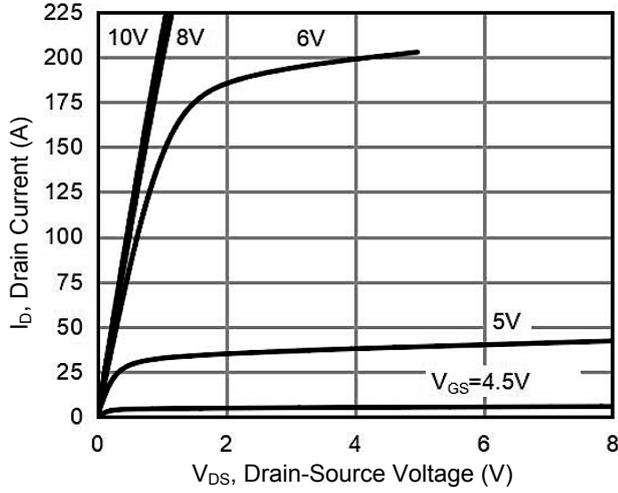
**Electrical Characteristics** ( $T_C=25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
<b>On / Off Characteristics</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	150	-	-	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=150V, V_{GS}=0V$	-	-	1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	$\pm 100$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.5	3.3	4.5	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=20A$	-	3.3	4.0	m $\Omega$
Forward Transconductance	gfs	$V_{DS}=10V, I_D=40A$	-	75	-	S
<b>Dynamic and Switching Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=75V, V_{GS}=0V, F=1.0MHz$	-	7150	-	pF
Output Capacitance	$C_{oss}$		-	2050	-	
Reverse Transfer Capacitance	$C_{rss}$		-	47	-	
Turn-On Delay Time <sup>2</sup>	$t_{d(on)}$	$V_{DD}=75V, I_D=75A, V_{GS}=10V, R_G=4.7\Omega$	-	30	-	nS
Turn-On Rise Time <sup>2</sup>	$t_r$		-	40	-	
Turn-Off Delay Time <sup>2</sup>	$t_{d(off)}$		-	70	-	
Turn-Off Fall Time <sup>2</sup>	$t_f$		-	15	-	
Total Gate Charge <sup>2</sup>	$Q_g$	$V_{DS}=75V, I_D=20A, V_{GS}=10V$	-	106	-	nC
Gate-Source Charge <sup>2</sup>	$Q_{gs}$		-	36	-	
Gate-Drain Charge <sup>2</sup>	$Q_{gd}$		-	27	-	
<b>Drain-Source Ratings and Characteristics</b>						
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_F=20A$	-	-	1.2	V
Diode Forward Current	$I_S$	-	-	-	265	A
Reverse Recovery Time	$t_{rr}$	$T_J=25^\circ\text{C}, I_F=100A, di/dt=100A/\mu s$	-	108	-	nS
Reverse Recovery Charge	$Q_{rr}$		-	270	-	nC

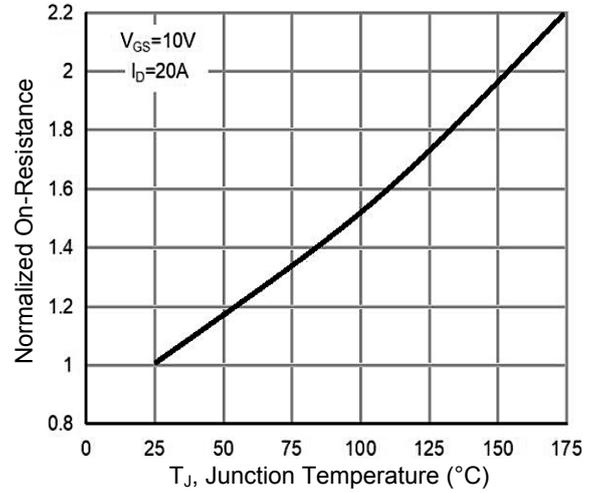
Notes:

1. EAS condition:  $T_J=25^\circ\text{C}, V_{DD}=50V, V_G=10V, L=0.5mH, R_G=25\Omega$
2. Guaranteed by design, not subject to production
3. These curves are based on the junction-to-case thermal impedance which is measured with the device mounted to a large heatsink, assuming a maximum junction temperature of  $T_{J(MAX)}=175^\circ\text{C}$ . The SOA curve provides a single pulse rating.

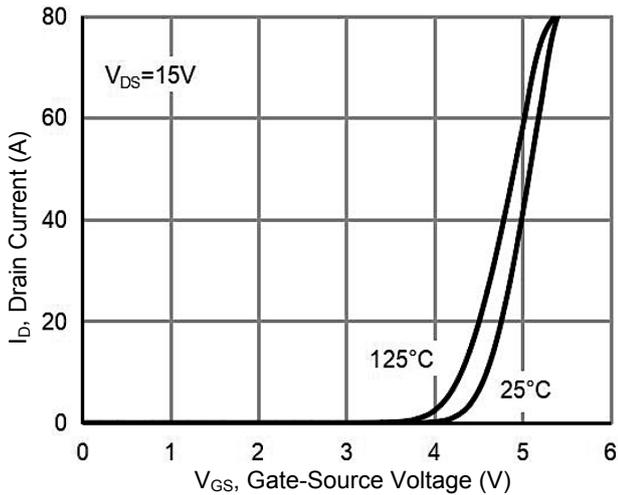
**Typical Electrical and Thermal Characteristic Curves**



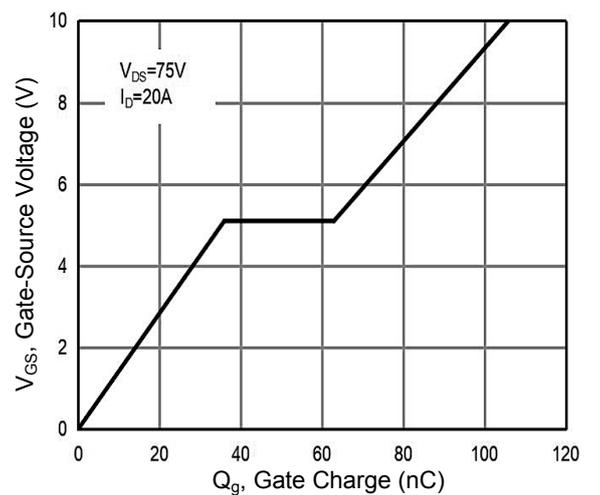
**Figure 1. Output Characteristics**



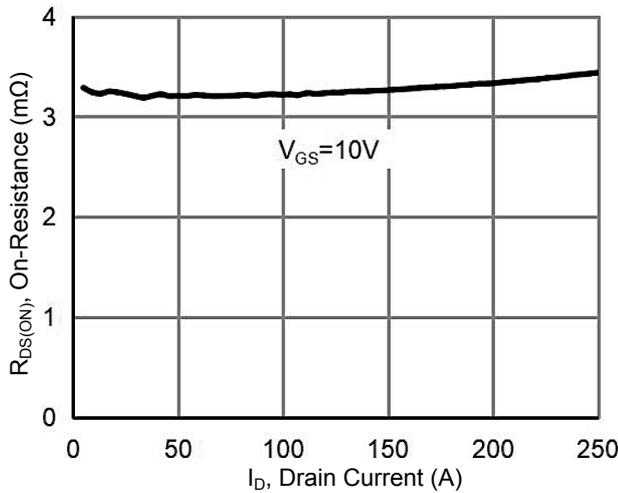
**Figure 2.  $R_{DS(ON)}$  vs. Junction Temperature**



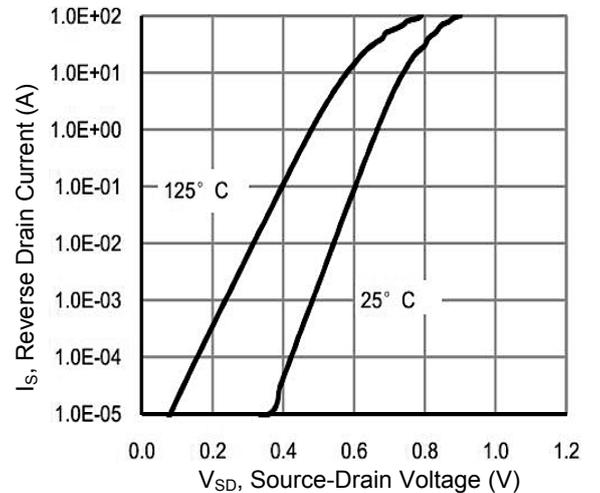
**Figure 3. Transfer Characteristics**



**Figure 4. Gate Charge**

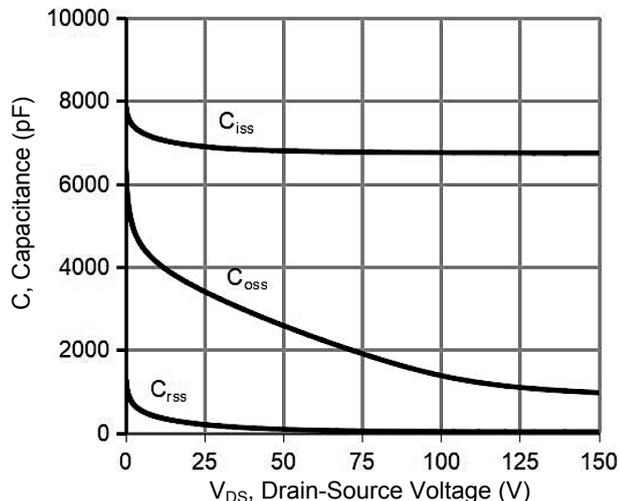


**Figure 5.  $R_{DS(ON)}$  vs. Drain Current**

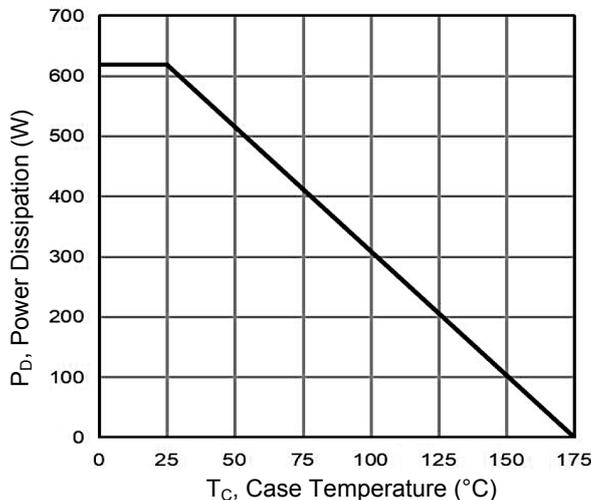


**Figure 6. Source-Drain Diode Forward Voltage**

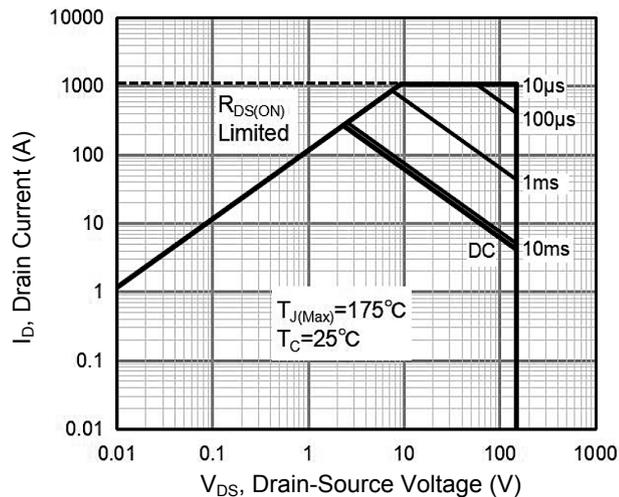
**Typical Electrical and Thermal Characteristic Curves**



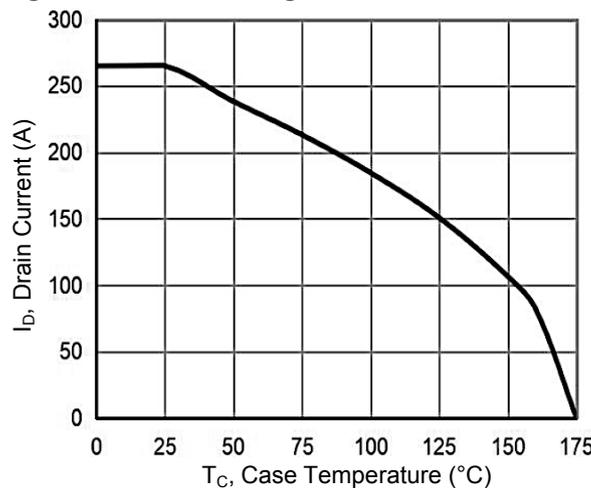
**Figure 7. Capacitance vs.  $V_{DS}$**



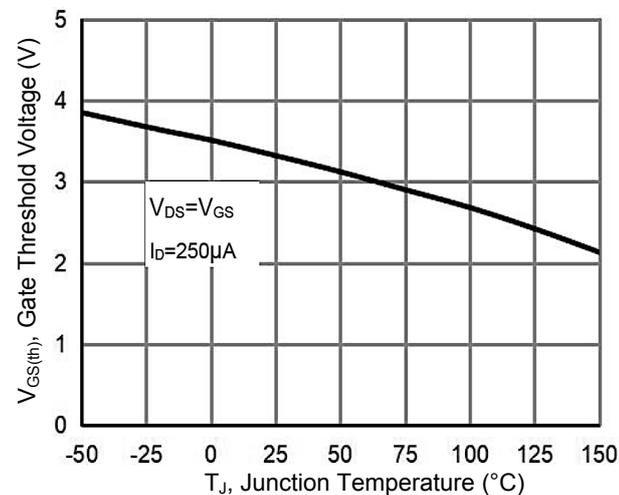
**Figure 8. Power De-rating**



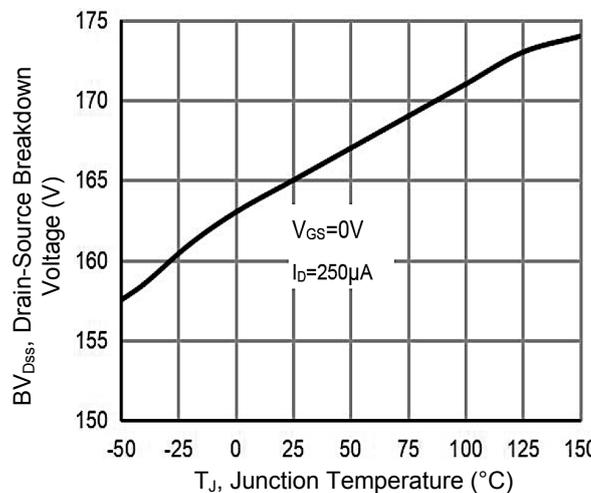
**Figure 9. Safe Operation Area<sup>3</sup>**



**Figure 10. Current De-rating**

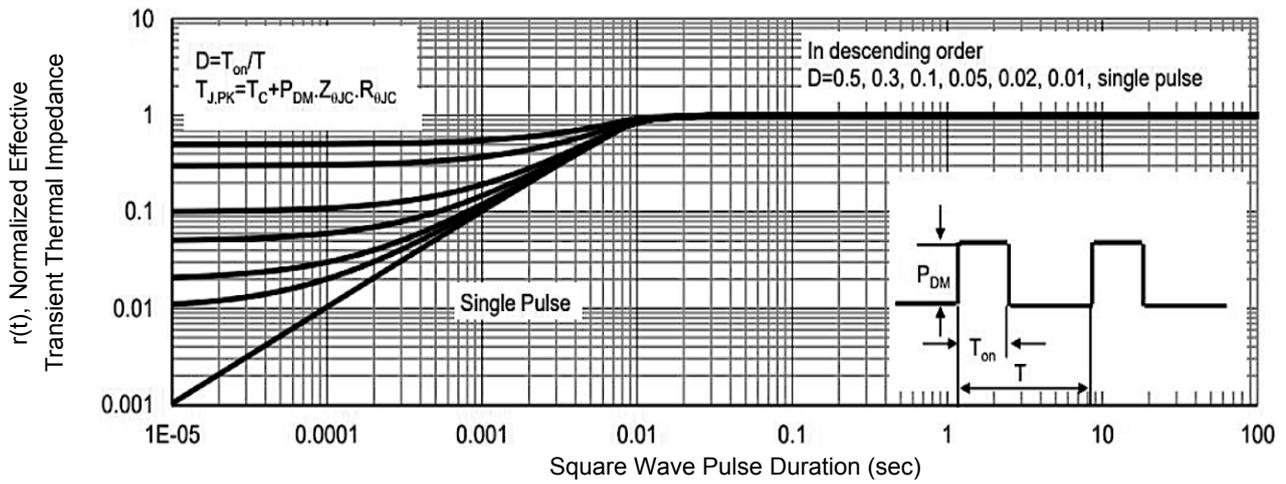


**Figure 11.  $V_{GS(th)}$  vs. Junction Temperature**



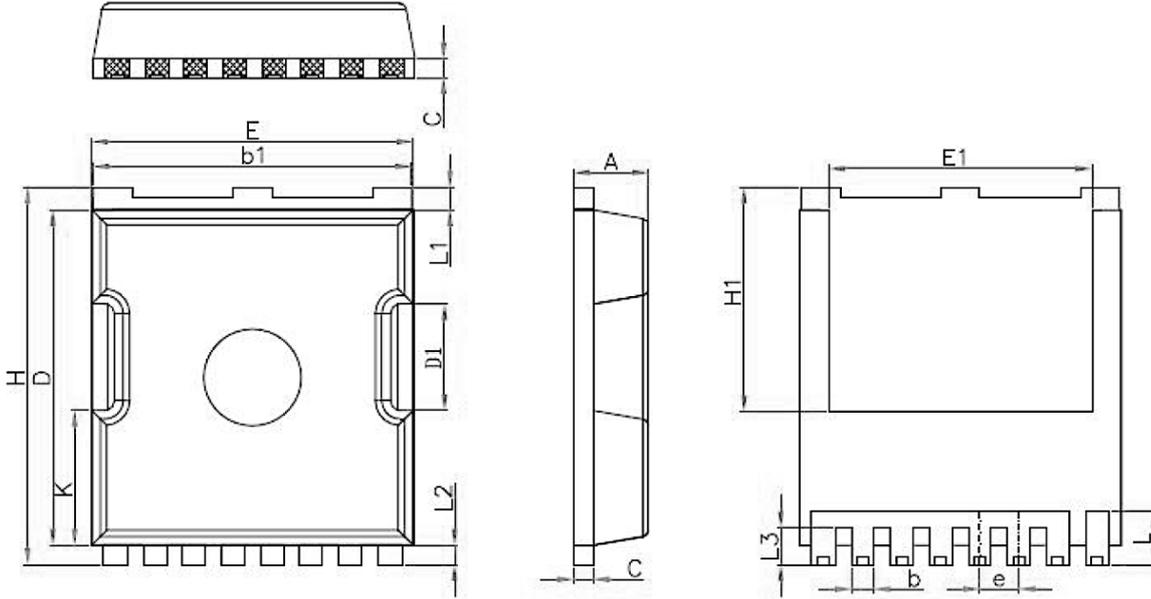
**Figure 12.  $BV_{DSS}$  vs. Junction Temperature**

**Typical Electrical and Thermal Characteristic Curves**



**Figure 13. Normalized Maximum Transient Thermal Impedance**

**Package Outline Dimensions (TOLL)**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	2.20	2.40	0.087	0.094
b	0.65	0.85	0.026	0.033
b1	9.70	9.90	0.382	0.390
C	0.50	0.70	0.020	0.028
D	10.30	10.50	0.406	0.413
D1	3.15	3.45	0.124	0.136
E	9.70	10.10	0.382	0.398
E1	8.00	8.20	0.315	0.323
e	1.10	1.30	0.043	0.051
H	11.60	11.80	0.457	0.465
H1	6.85	7.05	0.270	0.278
K	4.08	4.28	0.161	0.169
L	1.60	2.10	0.063	0.083
L1	0.60	0.80	0.024	0.031
L2	0.50	0.70	0.020	0.028
L3	1.05	1.30	0.041	0.051

**Order Information**

Device	Package	Marking	Packaging	SPQ
GSFTL15265	TOLL	TL15265	Tape & Reel	2,000 Pcs / Reel

For more information, please contact us at: [inquiry@goodarksemi.com](mailto:inquiry@goodarksemi.com)