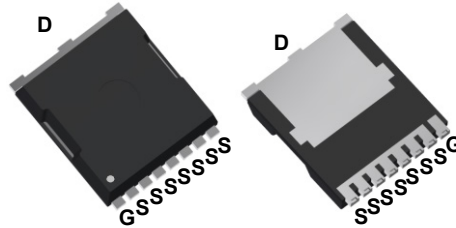
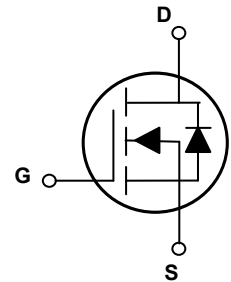


**Main Product Characteristics**

$BV_{DSS}$	100V
$R_{DS(ON)}$	2.7m $\Omega$ (Max)
$I_D$	200A



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 GSFTL2R710 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** ( $T_C=25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Max.	Unit
Drain-Source Voltage	$V_{DS}$	100	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current-Continuous, @ Steady-State ( $T_C=25^\circ\text{C}$ ) <sup>1</sup>	$I_D$	200	A
Drain Current-Continuous, @ Steady-State ( $T_C=100^\circ\text{C}$ )		142	
Drain Current-Pulsed <sup>2</sup>	$I_{DM}$	800	A
Single Pulse Avalanche Energy <sup>3</sup>	$E_{AS}$	961	mJ
Power Dissipation ( $T_C=25^\circ\text{C}$ )	$P_D$	278	W
Linear Derating Factor ( $T_C=25^\circ\text{C}$ )		2.2	
Thermal Resistance, Junction-to-Ambient (PCB Mounted, Steady-State) <sup>4</sup>	$R_{\theta JA}$	50	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	0.45	$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range	$T_J$	-55 To +150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 To +150	$^\circ\text{C}$

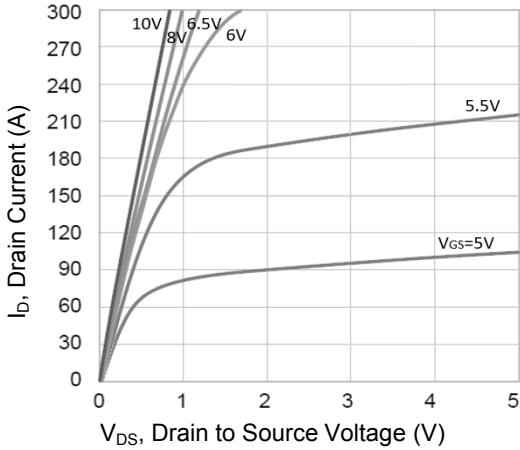
### Electrical Characteristics ( $T_C=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
<b>On / Off Characteristics</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	100	-	-	V
Drain-Source Leakage Current	$I_{DSS}$	$V_{DS}=100V, V_{GS}=0V$	-	-	1	$\mu A$
		$T_J=125^\circ C$	-	-	20	$\mu A$
Gate-Source Forward Leakage	$I_{GSS}$	$V_{GS}=\pm 20V$	-	-	$\pm 100$	nA
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=60A$	-	2.2	2.7	m $\Omega$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\mu A$	2.1	3	3.9	V
<b>Dynamic and Switching Characteristics</b>						
Total Gate Charge	$Q_g$	$V_{DS}=50V, I_D=90A, V_{GS}=10V$	-	165	-	nC
Gate-Source Charge	$Q_{gs}$		-	61	-	
Gate-Drain ("Miller") Charge	$Q_{gd}$		-	40	-	
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=50V, R_G=3\Omega, V_{GS}=10V, I_D=90A$	-	33	-	nS
Rise Time	$t_r$		-	46	-	
Turn-Off Delay Time	$t_{d(off)}$		-	119	-	
Fall Time	$t_f$		-	44	-	
Input Capacitance	$C_{iss}$	$V_{DS}=50V, V_{GS}=0V, F=1MHz$	-	10430	-	pF
Output Capacitance	$C_{oss}$		-	1263	-	
Reverse Transfer Capacitance	$C_{rss}$		-	35	-	
Gate Resistance	$R_g$	$F=1MHz$	-	2.2	-	$\Omega$
<b>Drain-Source Diode Characteristics and Maximum Ratings</b>						
Continuous Source Current (Body Diode)	$I_S$	MOSFET symbol showing the integral reverse p-n junction diode.	-	-	200	A
Pulsed Source Current (Body Diode)	$I_{SM}$		-	-	800	A
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=60A$	-	1	1.2	V
Reverse Recovery Time	$t_{rr}$	$T_J=25^\circ C, I_F=90A, di/dt=100A/\mu s$	-	85	-	nS
Reverse Recovery Charge	$Q_{rr}$		-	0.26	-	$\mu C$

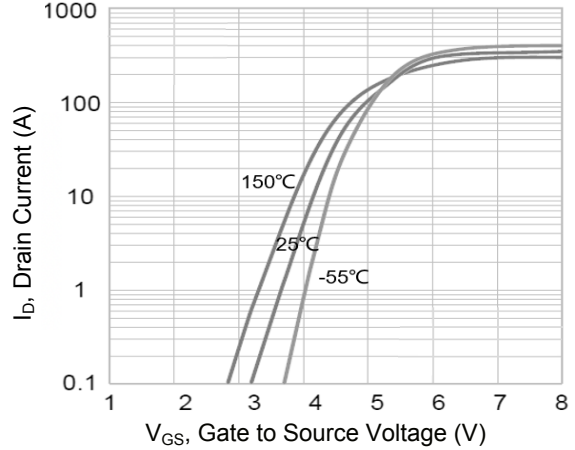
Note:

1. Pulse Test: Pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ .
2. Repetitive rating; pulse width limited by max. junction temperature.
3.  $L=0.5mH, V_{DD}=80V, I_{AS}=62A, T_J=25^\circ C$ .
4. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

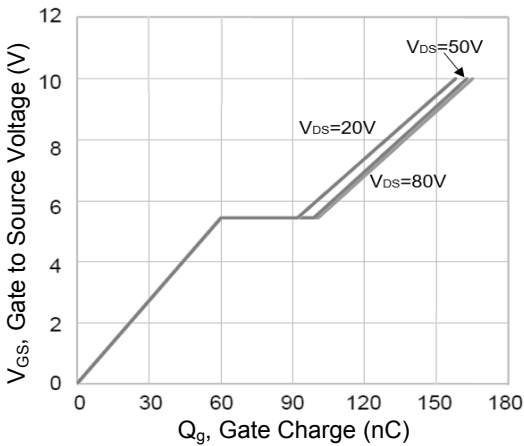
**Typical Electrical and Thermal Characteristic Curves**



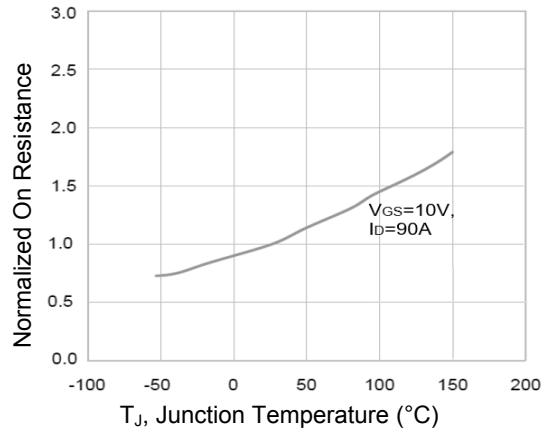
**Figure 1. Typical Output Characteristics**



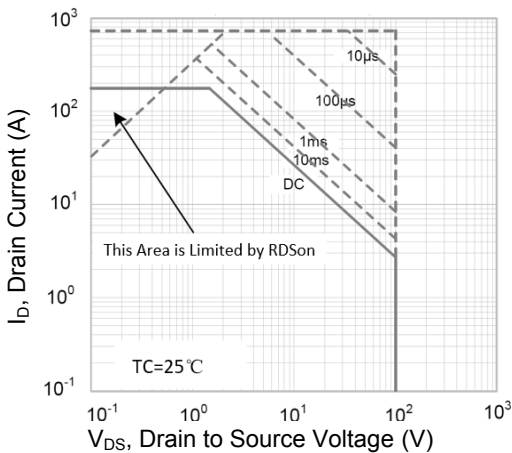
**Figure 2. Transfer Characteristics**



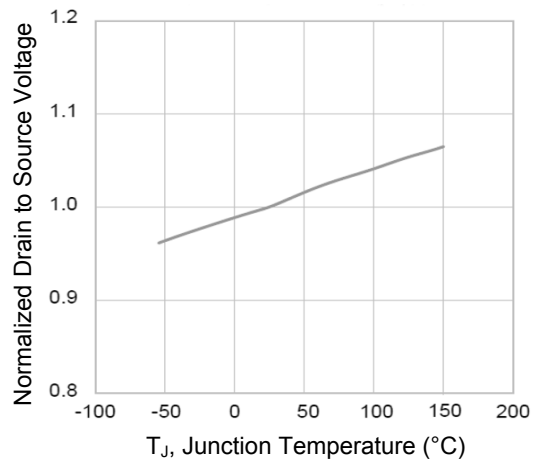
**Figure 3. Gate Charge Characteristics**



**Figure 4. Normalized  $R_{DS(ON)}$  vs.  $T_J$**

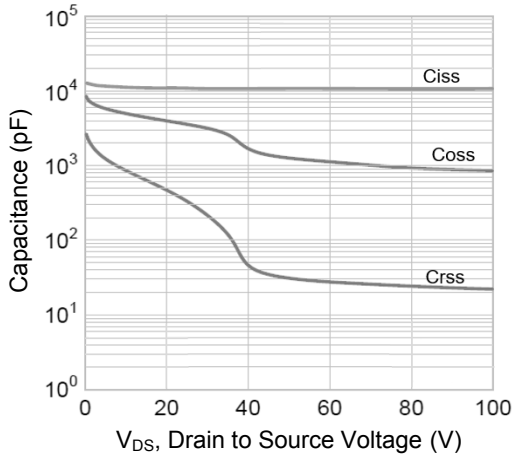


**Figure 5. Safe Operation Area**

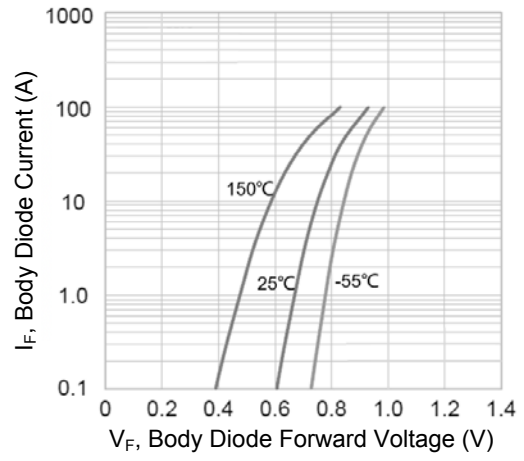


**Figure 6. Normalized  $BV_{DSS}$  vs.  $T_J$**

**Typical Electrical and Thermal Characteristic Curves**

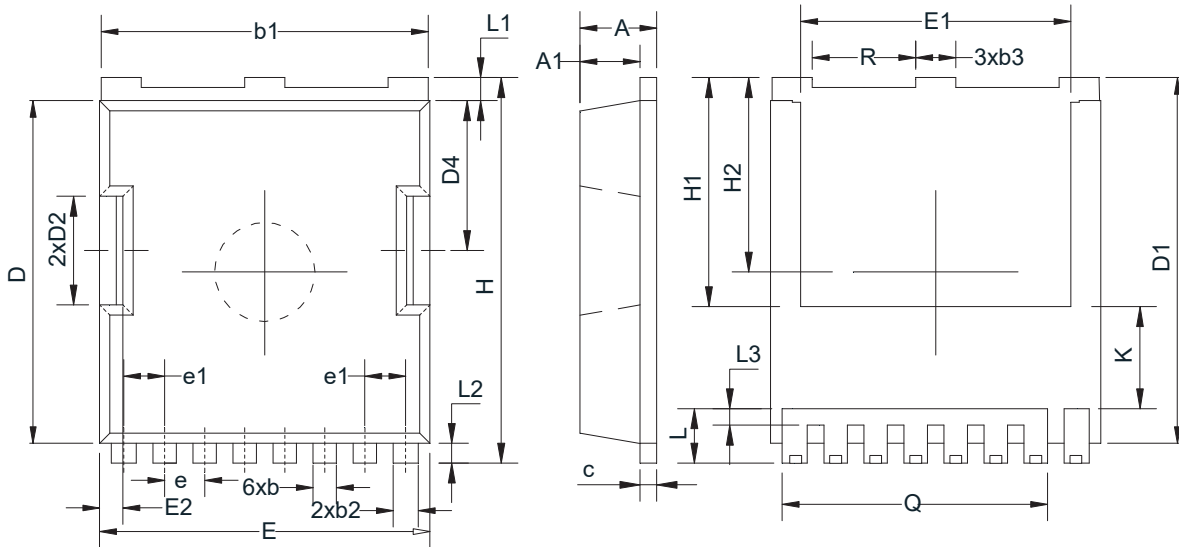


**Figure 7. Capacitance Characteristics**



**Figure 8. Body Diode Characteristics**

**Package Outline Dimensions (TOLL)**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.25	2.35	0.089	0.093
A1	1.75	1.85	0.069	0.073
b	0.65	0.75	0.026	0.030
b1	9.75	9.85	0.384	0.388
b2	0.70	0.80	0.028	0.031
b3	1.15	1.25	0.045	0.049
c	0.45	0.55	0.018	0.022
D	10.35	10.45	0.407	0.411
D1	11.00	11.20	0.433	0.441
D2	3.25	3.35	0.128	0.132
D4	4.50	4.60	0.177	0.181
e	1.200 BSC		0.047 BSC	
e1	1.225 BSC		0.048 BSC	
E	9.85	9.95	0.388	0.392
E1	8.00	8.20	0.315	0.323
E2	0.65	0.75	0.026	0.030
H	11.60	11.80	0.457	0.465
H1	6.95 BSC		0.274 BSC	
H2	5.90 BSC		0.232 BSC	
K	3.10 REF		0.122 REF	
L	1.55	1.75	0.061	0.069
L1	0.65	0.75	0.026	0.030
L2	0.50	0.70	0.020	0.028
L3	0.40	0.60	0.016	0.024
Q	7.95 REF		0.313 REF	
R	3.05	3.15	0.120	0.124

**Order Information**

Device	Package	Marking	Carrier	Quantity
GSFTL2R710	TOLL	TL2R710	Tape & Reel	2,000 Pcs / Reel

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