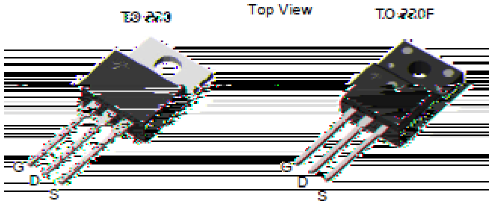
TMP830Z(G)/TMPF830Z(G)

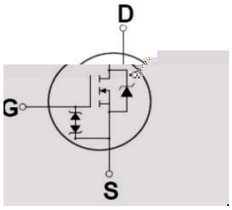
N-channel MOSFET

BV_{DSS}	I_D	$R_{DS(on)}$
500V	4.5A	<1.5Ω

Features

- Low gate charge
- 100% avalanche tested
- Improved dv/dt capability
- RoHS compliant
- Halogen free package
- JEDEC Qualification





Device	Package	Marking	Remark
TMP830Z / TMPF830Z	TO-220 / TO-220F	TMP830Z/ TMPF830Z	RoHS
TMP830ZG / TMPF830ZG	TO-220 / TO-220F	TMP830ZG/ TMPF830ZG	Halogen Free

Absolute Maximum Ratings

Parameter		Symbol	TMP830Z(G)	TMPF830Z(G)	Unit
Drain-Source Voltage		V_{DSS}	500		V
Gate-Source Voltage		V_{GS}	30		V
Continuous Drain Current	T_C = 25	I_D	4.5	4.5 *	A
	T_C = 100		3.1	3.1	A
Pulsed Drain Current (Note 1)		I_{DM}	18	18	A
Single Pulse Avalanche Energy (Note 2)		E_{AS}	282		mJ
Repetitive Avalanche Current (Note 1)		I_{AR}	4.5		A
Repetitive Avalanche Energy (Note 1)		E_{AR}	9.84		mJ
Power Dissipation	T_C = 25	P_D	98.4	32.9	W
	Derate above 25		0.78	0.26	W/
Peak Diode Recovery dv/dt (Note 3)		dv/dt	4.5		V/ns
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150		
Maximum lead temperature for soldering purposes,		T_L	300		

* Limited only by maximum junction temperature

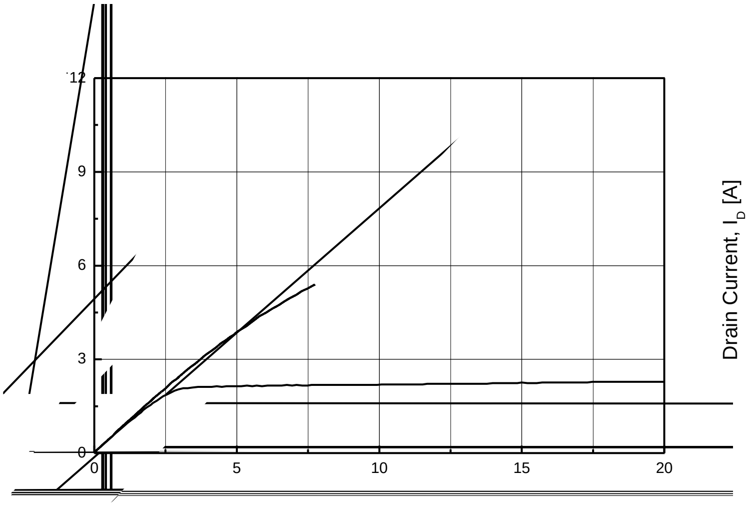
Thermal Characteristics

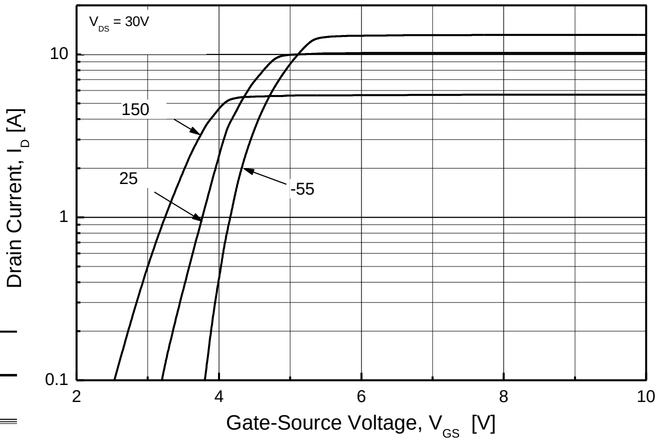
Parameter	Symbol	TMP830Z(G)	TMPF830Z(G)	Unit
Maximum Thermal resistance, Junction-to-Case	$R_{\theta JC}$	1.27	3.8	/W
Maximum Thermal resistance, Junction-to-Ambient	$R_{\theta JA}$	62.5	62.5	/W

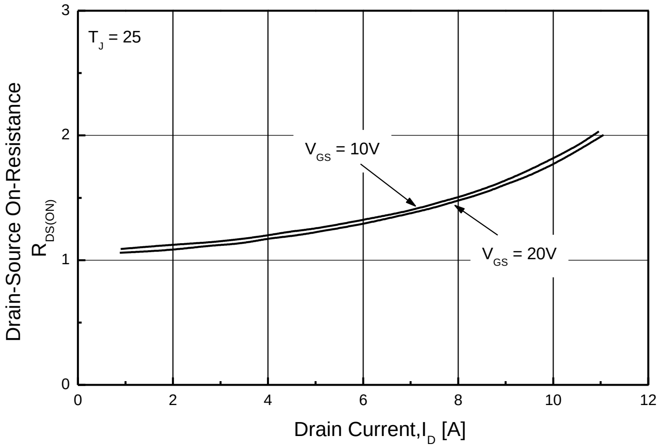
Electrical Characteristics : T_C=25 , unless otherwise noted

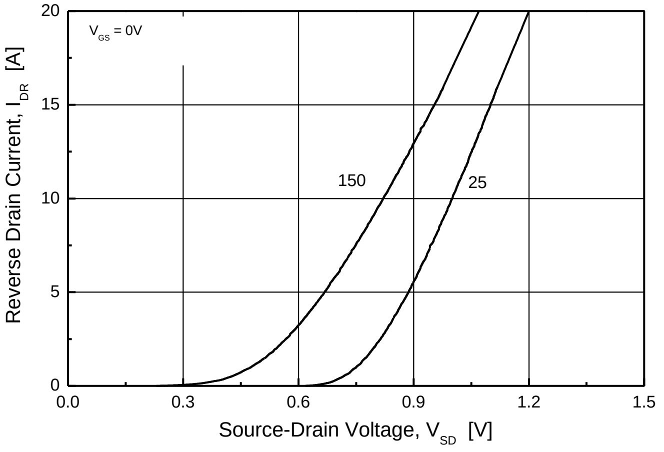
Note :

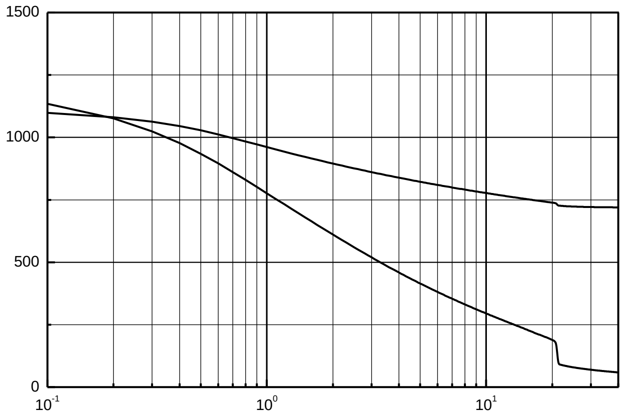
1. Repeated rating : Pulse width limited by safe operating area
2. L=25mH, I_{AS} = 4.5A, V_{DD} = 50V, R_G = 25 , Starting T_J= 25
3 I_{SD} 4.5A, di/dt µs , V_{DD} $_{DS}$, Starting T_J= 25
µ
5. Essentially Independent of Operating Temperature Typical Characteristics

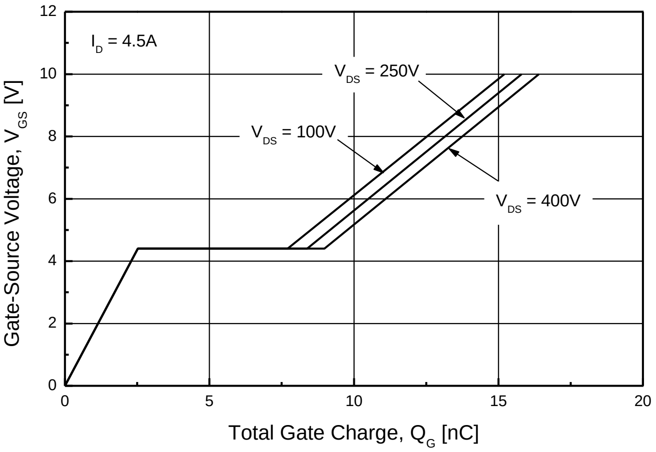

12
9
6
3
0
0
5
10
15
20

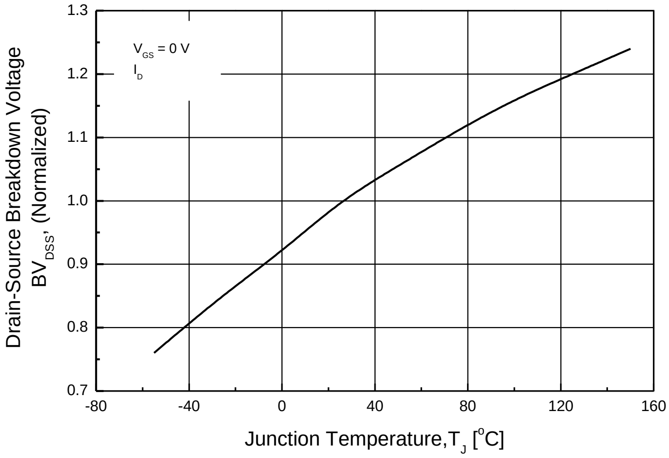

V_DS = 30V
10
1
0.1
150
25
-55
Drain Current, I_D [A]
2
4
6
8
10
Gate-Source Voltage, V_GS [V]

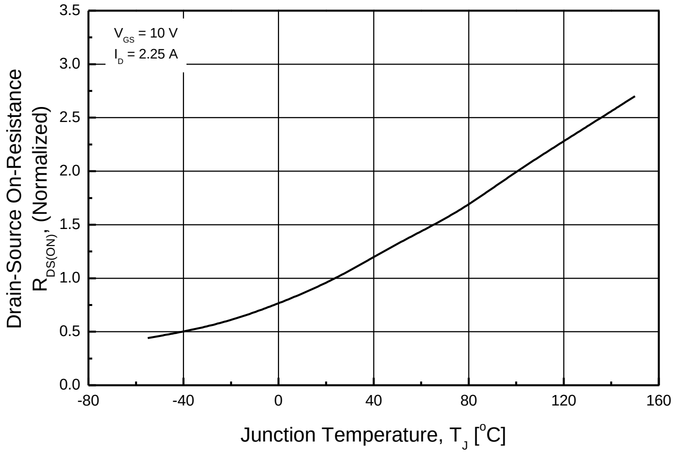

T_J = 25
3
2
1
0
V_GS = 10V
V_GS = 20V
Drain-Source On-Resistance R_DS(ON)
0
2
4
6
8
10
12
Drain Current,I_D [A]

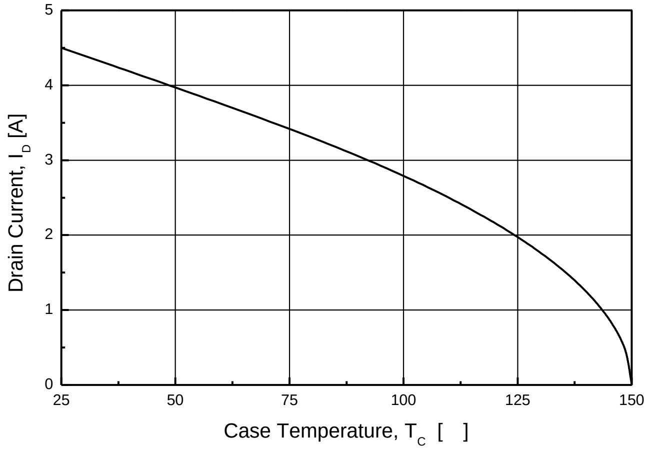

V_GS = 0V
20
15
10
5
0
150
25
Reverse Drain Current, I_DR [A]
0.0
0.3
0.6
0.9
1.2
1.5
Source-Drain Voltage, V_SD [V]

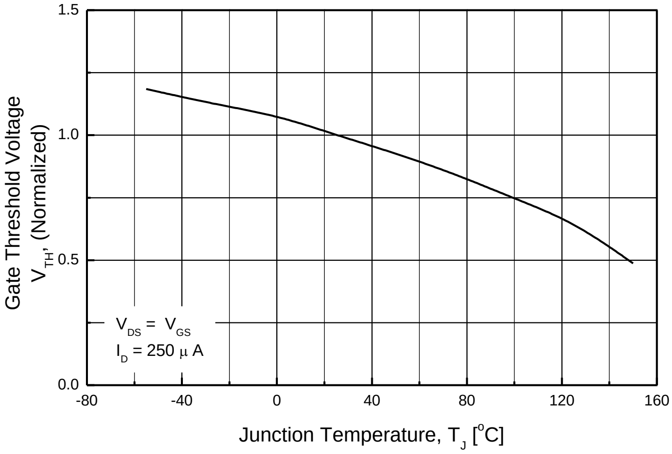

1500
1000
500
0
10^-1
10^0
10^1


I_D = 4.5A
12
10
8
6
4
2
0
V_DS = 250V
V_DS = 100V
V_DS = 400V
Gate-Source Voltage, V_GS [V]
0
5
10
15
20
Total Gate Charge, Q_G [nC]

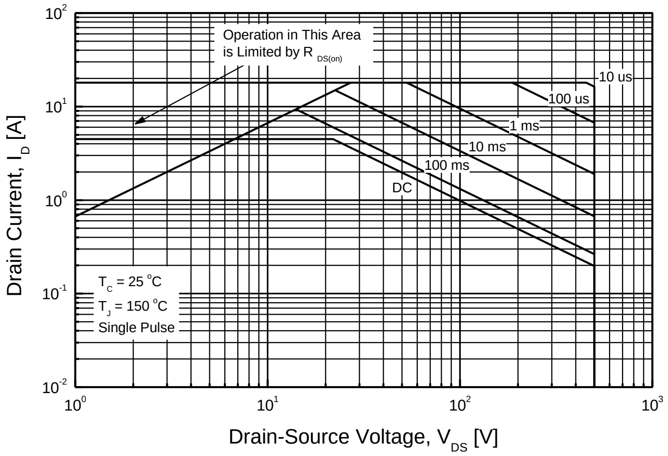




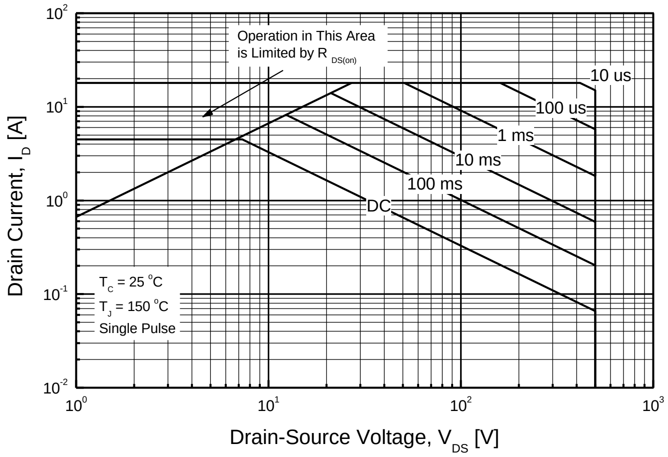


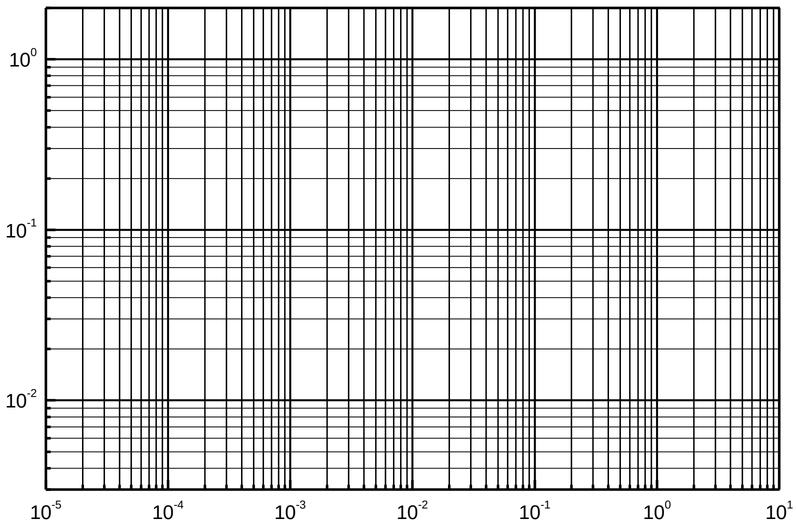


TMP830Z(G)



TMPF830Z(G)

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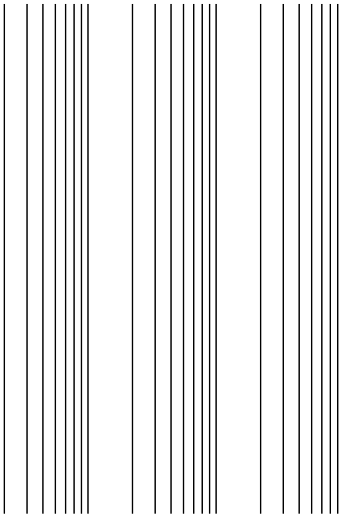
TMPF830Z(G)