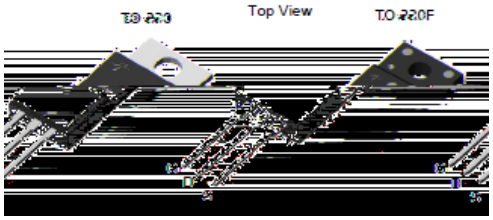
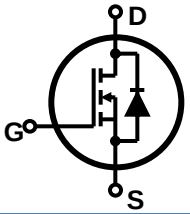
TMP15N50/TMPF15N50
TMP15N50G/TMPF15N50G

Features

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

V_{DSS} = 550 V @T_{jmax}
I_D = 14A
$R_{DS(on)}$ = 0.44 (max) @ V_{GS}= 10 V





Device	Package	Marking	Remark
TMP15N50 / TMPF15N50	TO-220 / TO-220F	TMP15N50 / TMPF15N50	RoHS
TMP15N50G / TMPF15N50G	TO-220 / TO-220F	TMP15N50G / TMPF15N50G	Halogen Free

Absolute Maximum Ratings

Parameter		Symbol	TMP15N50(G)	TMPF15N50(G)	Unit
Drain-Source Voltage		V_{DS}	500		V
Gate-Source Voltage		V_{GS}	±30		V
Continuous Drain Current	T_C = 25 ℃	I_D	14	14*	A
	T_C = 100 ℃		9.3	9.3*	A
Pulsed Drain Current (Note 1)		I_{DM}	56	56*	A
Single Pulse Avalanche Energy (Note 2)		E_{AS}	630		mJ
Repetitive Avalanche Current (Note 1)		I_{AR}	14		A
Repetitive Avalanche Energy (Note 1)		E_{AR}	23.1		mJ
Power Dissipation	T_C = 25 ℃	P_D	231	53	W
	Derate above 25 ℃		1.85	0.42	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, 1/8" from case for 5 seconds		T_L	300		℃

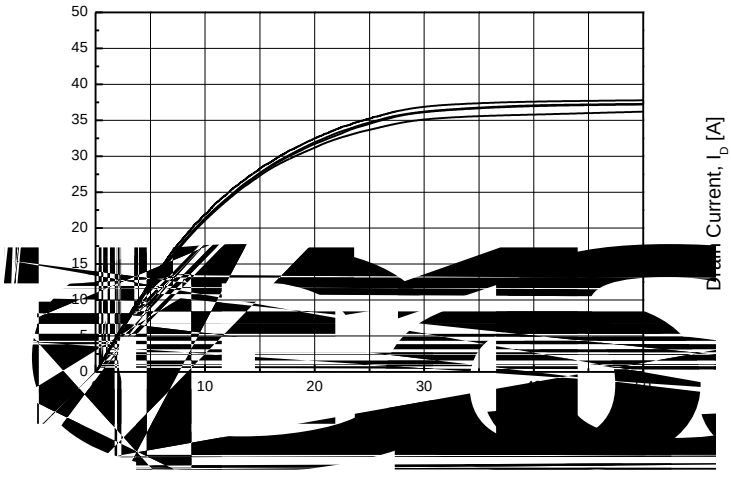
* Limited only by maximum junction temperature

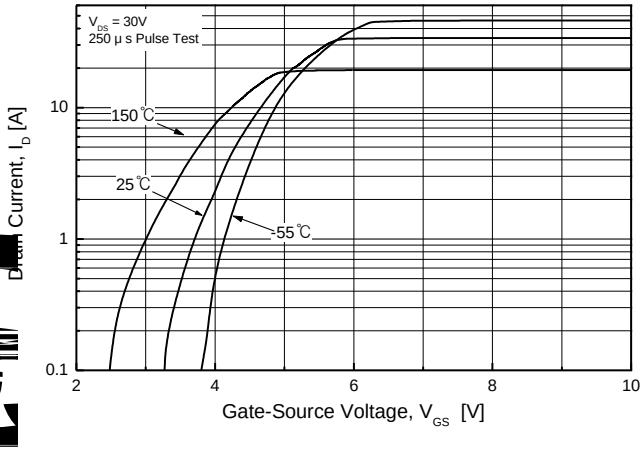
Thermal Characteristics

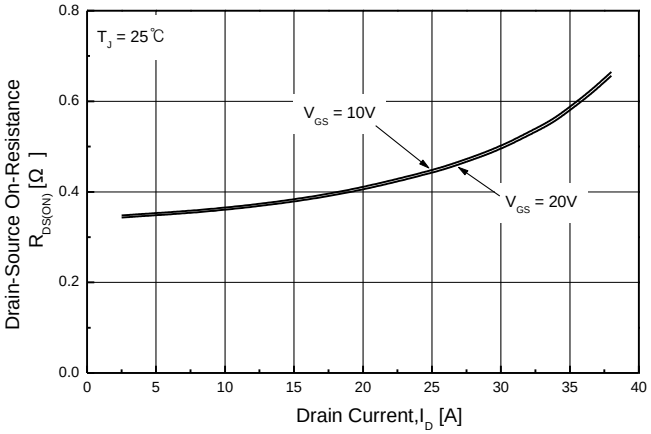
Parameter	Symbol	TMP15N50(G)	TMPF15N50(G)	Unit
Maximum Thermal resistance, Junction-to-Case	R_{JC}	0.54	2.34	℃/W
Maximum Thermal resistance, Junction-to-Ambient	R_{JA}	62.5	62.5	℃/W

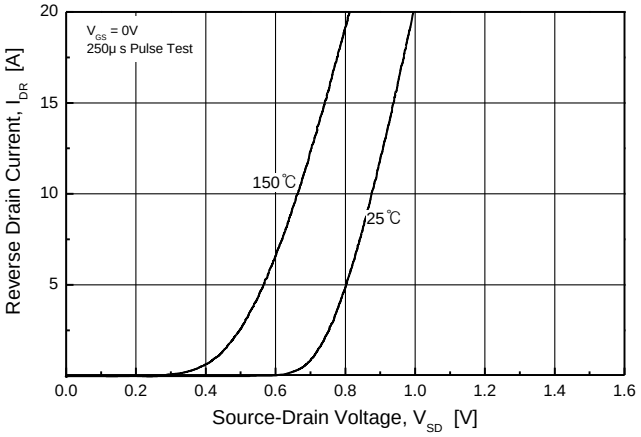
Electrical Characteristics : T_C=25℃, unless otherwise noted

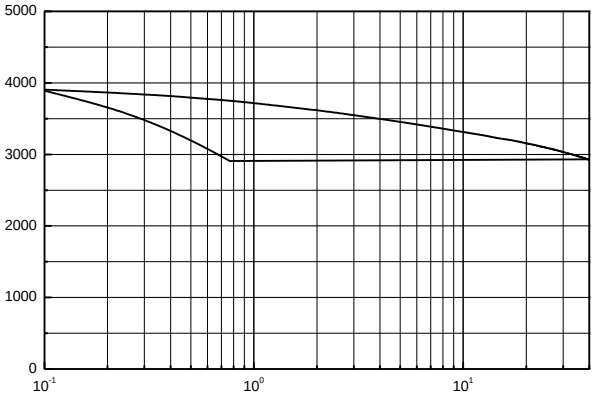
Note :
1. Repeated rating : Pulse width limited by safe operating area
2. L=5.9mH, I_{AS} = 14A, V_{DD} = 50V, R_G = 25Ω, Starting T_J= 25 ℃
3 I_{SD} ≤ 14A, di/dt ≤ 200A/μs , V_{DD} ≤ BV_{DS}, Starting T_J= 25 ℃
4. Pulse Test :Pulse width ≤ 300μs, Duty Cycle ≤ 2%
5. Essentially Independent of Operating Temperature Typical Characteristics

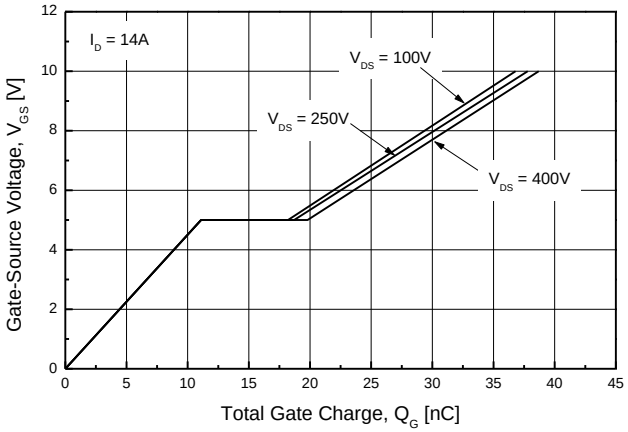


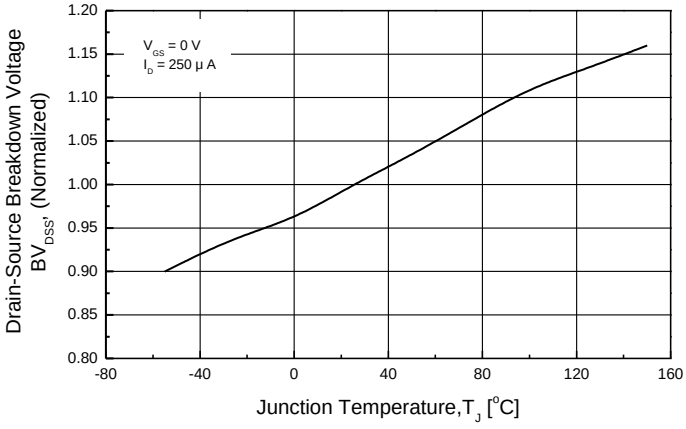

V_{DS} = 30V
250 μ s Pulse Test
150℃
25℃
-55℃
Drain Current, I_D [A]
Gate-Source Voltage, V_{GS} [V]

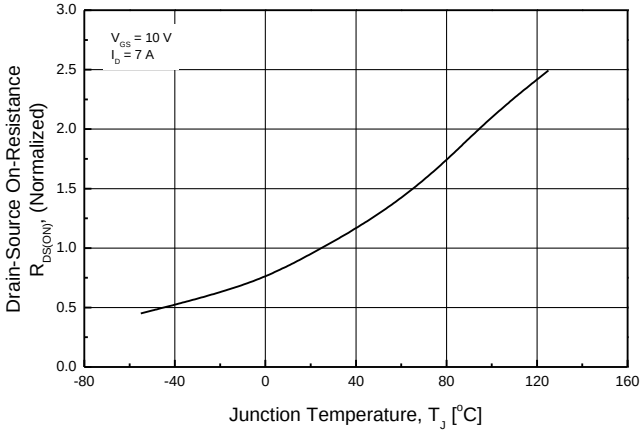

T_J = 25℃
V_{GS} = 10V
V_{GS} = 20V
Drain-Source On-Resistance
$R_{DS(ON)}$ [Ω]
Drain Current,I_D [A]

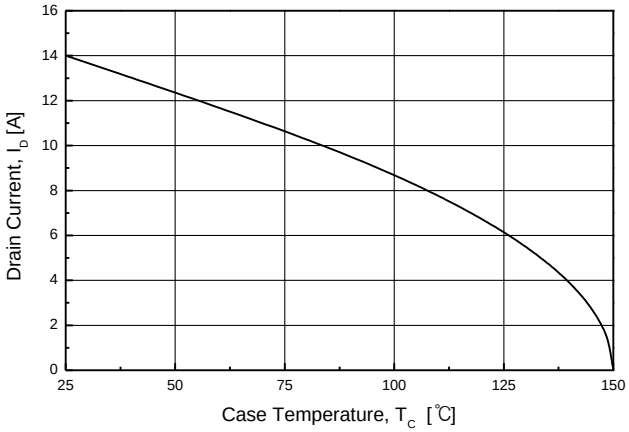

V_{GS} = 0V
250μ s Pulse Test
150℃
25℃
Reverse Drain Current, I_{DR} [A]
Source-Drain Voltage, V_{SD} [V]



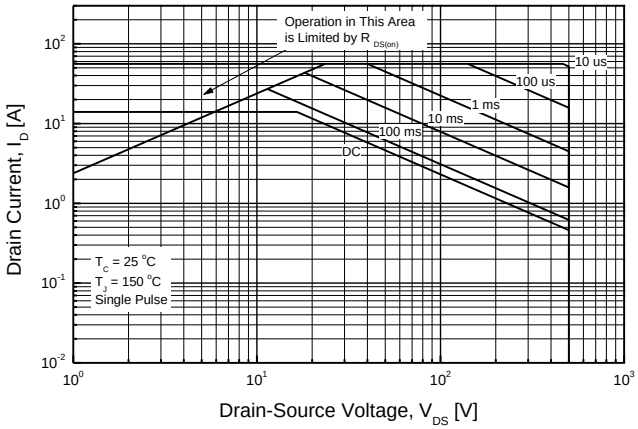

I_D = 14A
V_{DS} = 100V
V_{DS} = 250V
V_{DS} = 400V
Gate-Source Voltage, V_{GS} [V]
Total Gate Charge, Q_G [nC]







TMP15N50(G)



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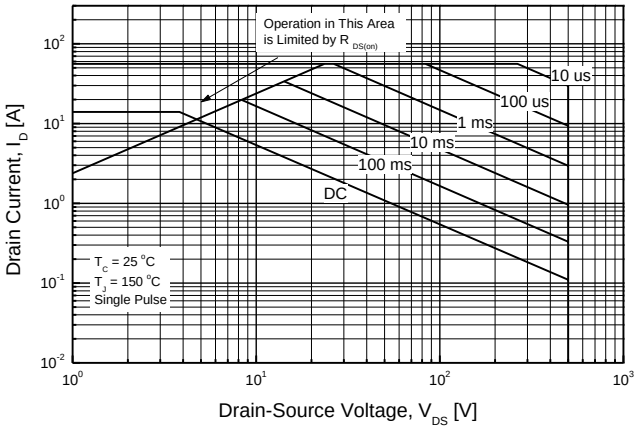
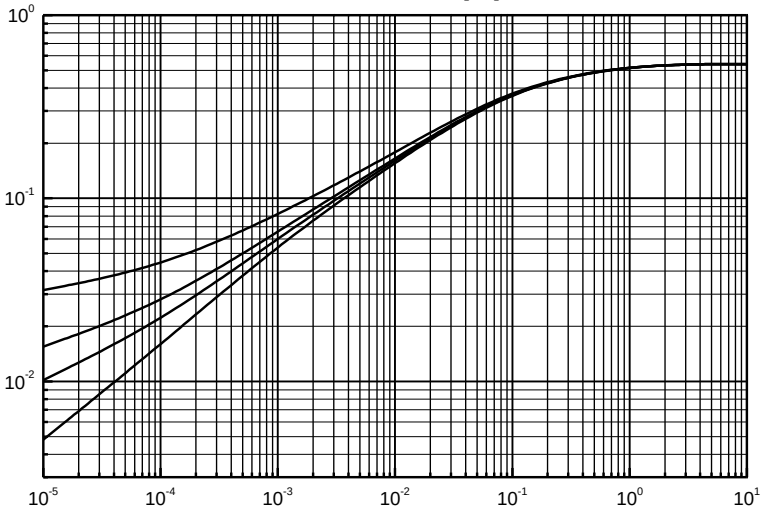


TMP15N50(G)



TMPF15N50(G)