

## Features

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

**$V_{DSS} = 550 \text{ V} @ T_{jmax}$**   
 **$I_D = 11\text{A}$**   
 **$R_{DS(ON)} = 0.67 \text{ (max)} @ V_{GS}= 10 \text{ V}$**

## Absolute Maximum Ratings

Parameter	Symbol	TMP11N50(G)		TMPF11N50(G)		Unit
Drain-Source Voltage	$V_{DSS}$	500		V		V
Gate-Source Voltage	$V_{GS}$	$\pm 30$		V		V
Continuous Drain Current	$T_C = 25 \text{ }^\circ\text{C}$	$I_D$	11	11 *	11 *	A
	$T_C = 100 \text{ }^\circ\text{C}$		6	6 *	6 *	A
Pulsed Drain Current (Note 1)	$I_{DM}$	44	44*	44*	44*	A
Single Pulse Avalanche Energy (Note 2)	$E_{AS}$	544		mJ		mJ
Repetitive Avalanche Current (Note 1)	$I_{AR}$	11		A		A
Repetitive Avalanche Energy (Note 1)	$E_{AR}$	15.8		mJ		mJ
Power Dissipation	$T_C = 25 \text{ }^\circ\text{C}$	$P_D$	158	51.4	51.4	W
	Derate above 25 °C		1.26	0.41	0.41	W/°C
Peak Diode Recovery dv/dt (Note 3)	dv/dt	4.5		V/ns		V/ns
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55~150		°C		°C
Maximum lead temperature for soldering purposes,	$T_L$	300		°C		°C

## Thermal Characteristics

Parameter	Symbol			

**Electrical Characteristics :  $T_c=25^\circ\text{C}$ , unless otherwise noted**

Parameter	Symbol	Test condition	Min	Typ	Max	Units
<b>OFF</b>						
Drain-Source Breakdown Voltage	$\text{BV}_{\text{DSS}}$	$V_{\text{GS}} = 0 \text{ V}, I_{\text{D}} = 250 \mu\text{A}$	500	--	--	V
Zero Gate Voltage Drain Current	$I_{\text{DSS}}$	$V_{\text{DS}} = 500 \text{ V}, V_{\text{GS}} = 0 \text{ V}$	--	--	1	$\mu\text{A}$
		$V_{\text{DS}} = 400 \text{ V}, T_c = 125^\circ\text{C}$	--	--	10	$\mu\text{A}$
Forward Gate-Source Leakage Current	$I_{\text{GSSF}}$	$V_{\text{GS}} = 30 \text{ V}, V_{\text{DS}} = 0 \text{ V}$	--	--	100	nA
Reverse Gate-Source Leakage Current	$I_{\text{GSSR}}$	$V_{\text{GS}} = -30 \text{ V}, V_{\text{DS}} = 0 \text{ V}$	--	--	-100	nA

**ON**

Gate Threshold Voltage	$V_{\text{GS(th)}}$	$V_{\text{DS}} = V_{\text{GS}}, I_{\text{D}} = 250 \mu\text{A}$	2	--	4	V
Drain-Source On-Resistance	$R_{\text{DS(on)}}$	$V_{\text{GS}} = 10 \text{ V}, I_{\text{D}} = 5.5 \text{ A}$	--	0.54	0.67	
Forward Transconductance <sup>(Note 4)</sup>	$g_{\text{f}}$	8523ET 8MC /P AMCID 30/Lang (en-B)BDC BT/F1 6 T11 0 0 1 2 .14 547.87 Tm 0 Tc(V) TJETBT F1 7 Tf1 0 0 1 21.34				




Note :

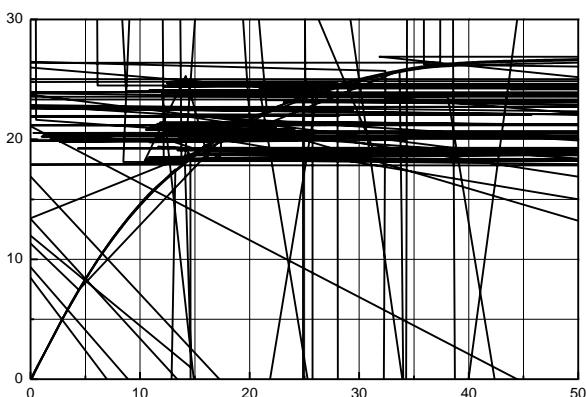
1. Repeated rating : Pulse width limited by safe operating area

2. L=8.1mH,  $I_{AS} = 11\text{A}$ ,  $V_{DD} = 50\text{V}$ ,  $R_G = 25 \Omega$ , Starting  $T_j = 25^\circ\text{C}$

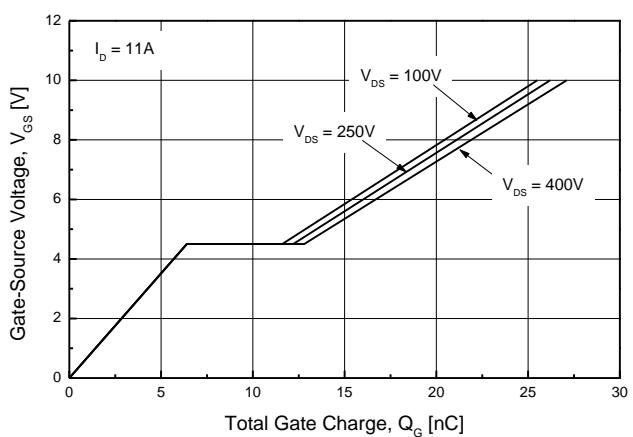
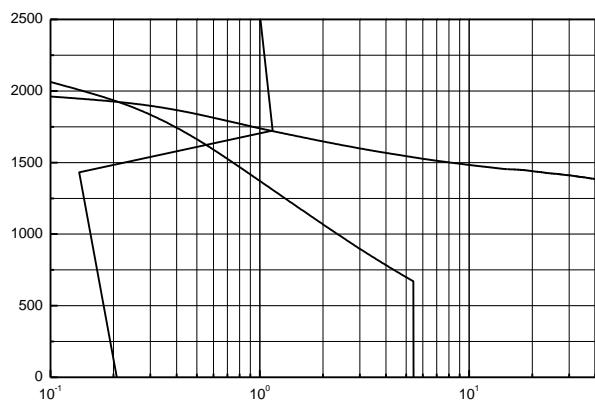
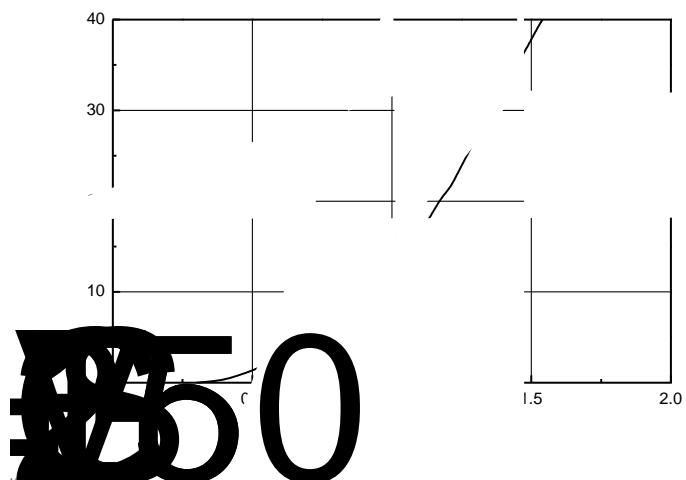
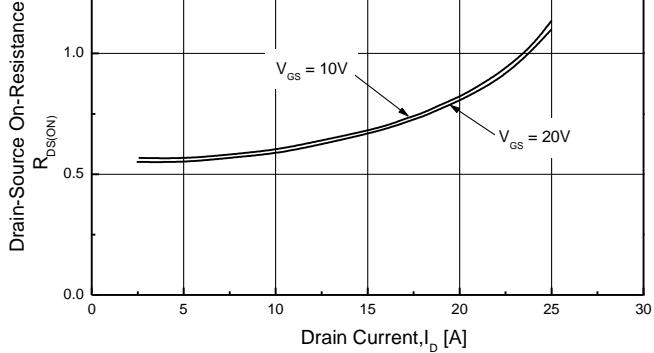
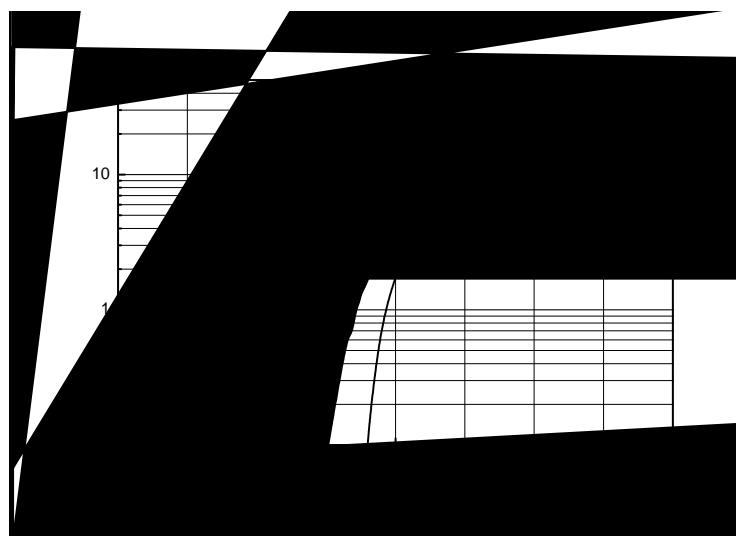
3.  $I_{SD} = 11\text{A}$ ,  $t = 1\text{ms}$ ,  $V_{DD} = 50\text{V}$ ,  $R_G = 25 \Omega$ , Starting  $T_j = 25^\circ\text{C}$

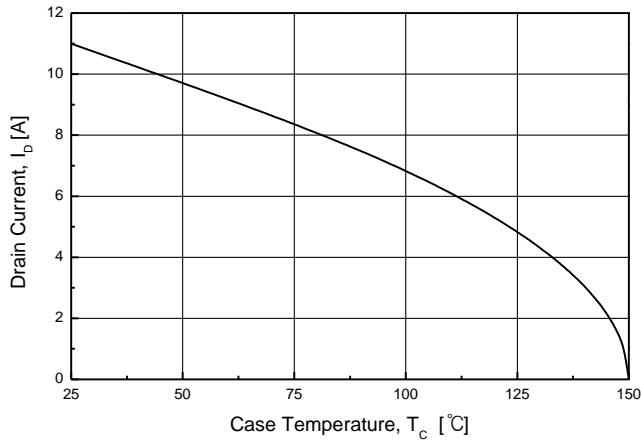
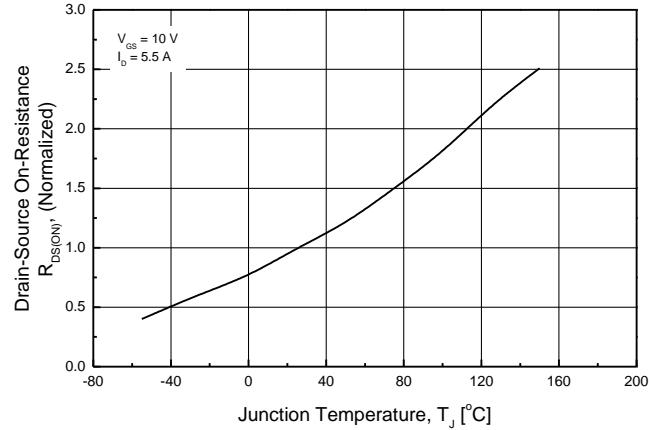
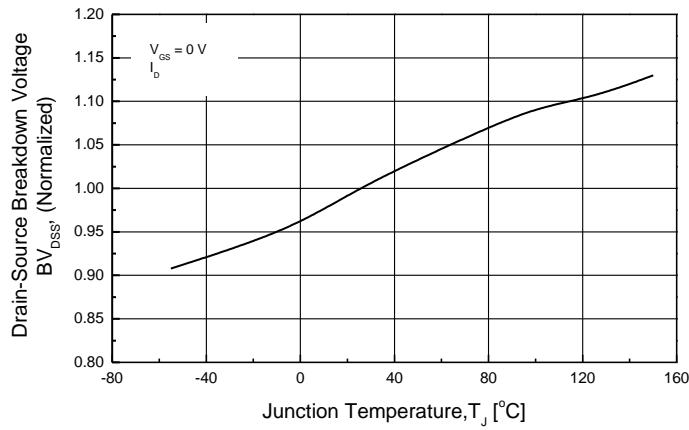
5. Essentially Independent of Operating Temperature Typical Characteristics

# TMP11N50/TMPF11N50 TMP11N50G/TMPF11N50G

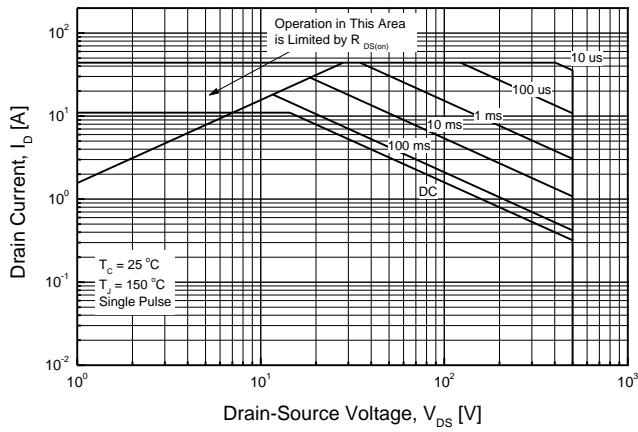


Drain Current,  $I_D$





### TMP11N50(G)



### TMPF11N50(G)

