JMH65R190PFFD

Product Summary

Parameters	Value	Unit
V_{DSS}	650	V
$V_{GS(th)\_Typ}$	3.6	V
I_D(@V_{GS}=10V)	12	A
$R_{DS(ON)\_Typ}$(@V_{GS}=10V	148	mΩ

Ordering Information

Device	Marking	MSL	Form	Package	Tube(pcs)	Per Carton (pcs)
JMH65R190PFFD-U	H65R190PF	N/A	Tube	TO-220FP	50	5000

Absolute Maximum Ratings (@ T_C = 25°C unless otherwise specified)

Symbol	Parameter		Value	Unit
V_{DS}	Drain-to-Source Voltage		650	V
V_{GS}	Gate-to-Source Voltage		±30	V
I_D	Continuous Drain Current	T_C = 25°C	12	A
		T_C = 100°C	7.6	
I_{DM}	Pulsed Drain Current [1]		Refer to Fig.4	A
E_{AS}	Single Pulsed Avalanche Energy [2]		65	mJ
P_D	Power Dissipation	T_C = 25°C	71	W
		T_C = 100°C	28	
T_J, T_{STG}	Junction & Storage Temperature Range		-55 to 150	°C

Thermal Characteristics

Symbol	Parameter	Max	Unit
R	Thermal Resistance, Junction to Ambient[3]	58	°C/W
R	Thermal Resistance, Junction to Case	1.8	

Electrical Characteristics (T_J = 25°C unless otherwise specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	I_D = 250μA, V_{GS} = 0V	650	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 650V, V_{GS} = 0V	-	-	10.0	μA
I_{GSS}	Gate-Body Leakage Current	V_{DS} = 0V, V_{GS} = ±30V	-	-	±100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D	2.5	3.6	4.6	V
$R_{DS(ON)}$			-	148	190	mΩ
R_g		V_{GS} = 0V, V_{DS} = 325V, f = 1MHz	-	4.9	-	Ω
C_{iss}	Input Capacitance		1084	1517	2049	pF
C_{oss}	Output Capacitance		28	39	52	pF
C_{rss}	Reverse Transfer Capacitance		-	5.9	-	pF
Q_g			23	32	43	nC
Q_{gs}			-	10	-	nC
Q_{gd}			-	11	-	nC
$t_{d(on)}$			-	36	-	ns
t_r			-	38	-	ns
$t_{d(off)}$			-	100	-	ns
t_f			-	30	-	ns
I_S			-	-	12	A
I_{SM}			-	-	48	A
V_{SD}			-		1.2	V
trr			94	131	177	ns
Qrr			-	851	-	nC

Notes: 1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.

2. E_{AS} condition: Starting T_J=25C, V_{DD}=50V, V_{GS}=10V, R_G=25ohm, L=10mH, I_{AS}=3.6A, V_{DD}=0V during time in avalanche.

3. R is measured with the device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

4. Pulse Test: Pulse Width 0.5%.

Typical Performance Characteristics

Figure 1: Power De-rating

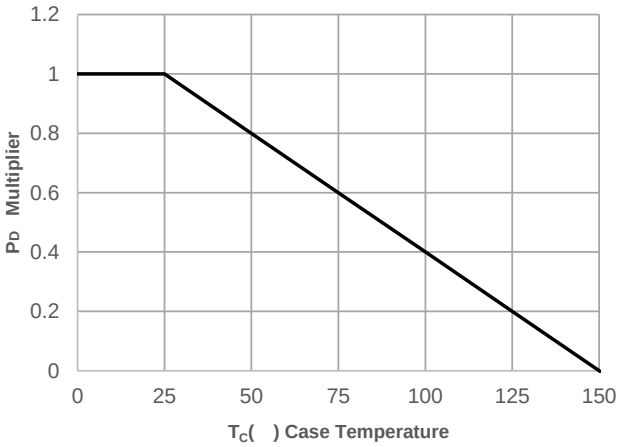
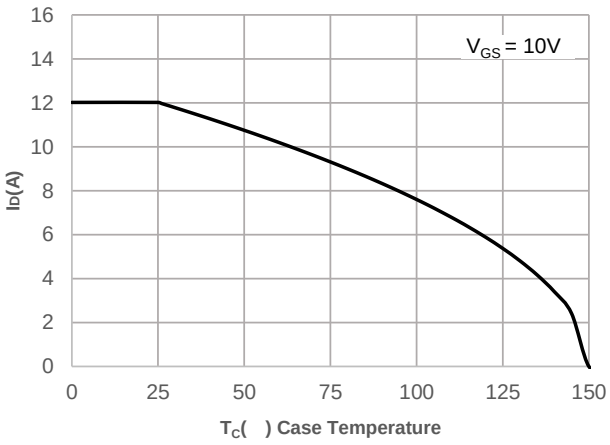
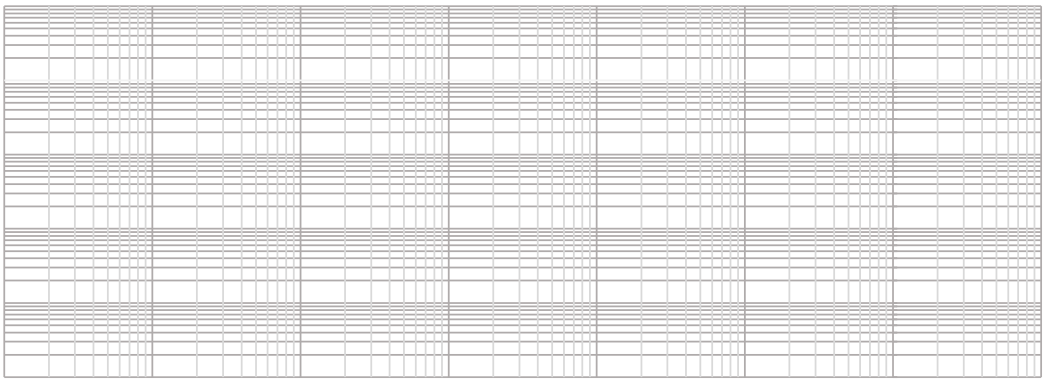


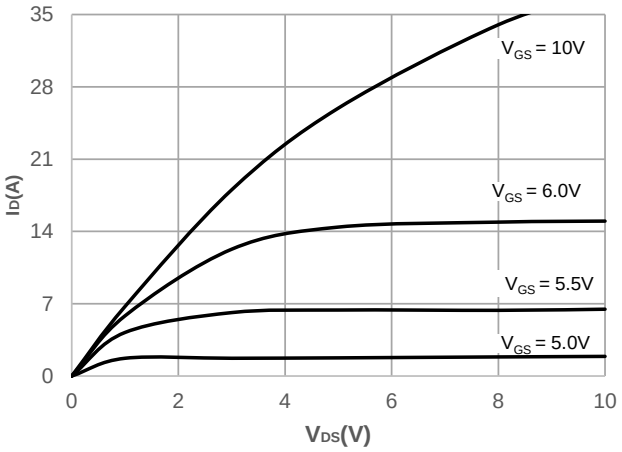
Figure 2: Current De-rating





Typical Performance Characteristics

Figure 5: Output Characteristics



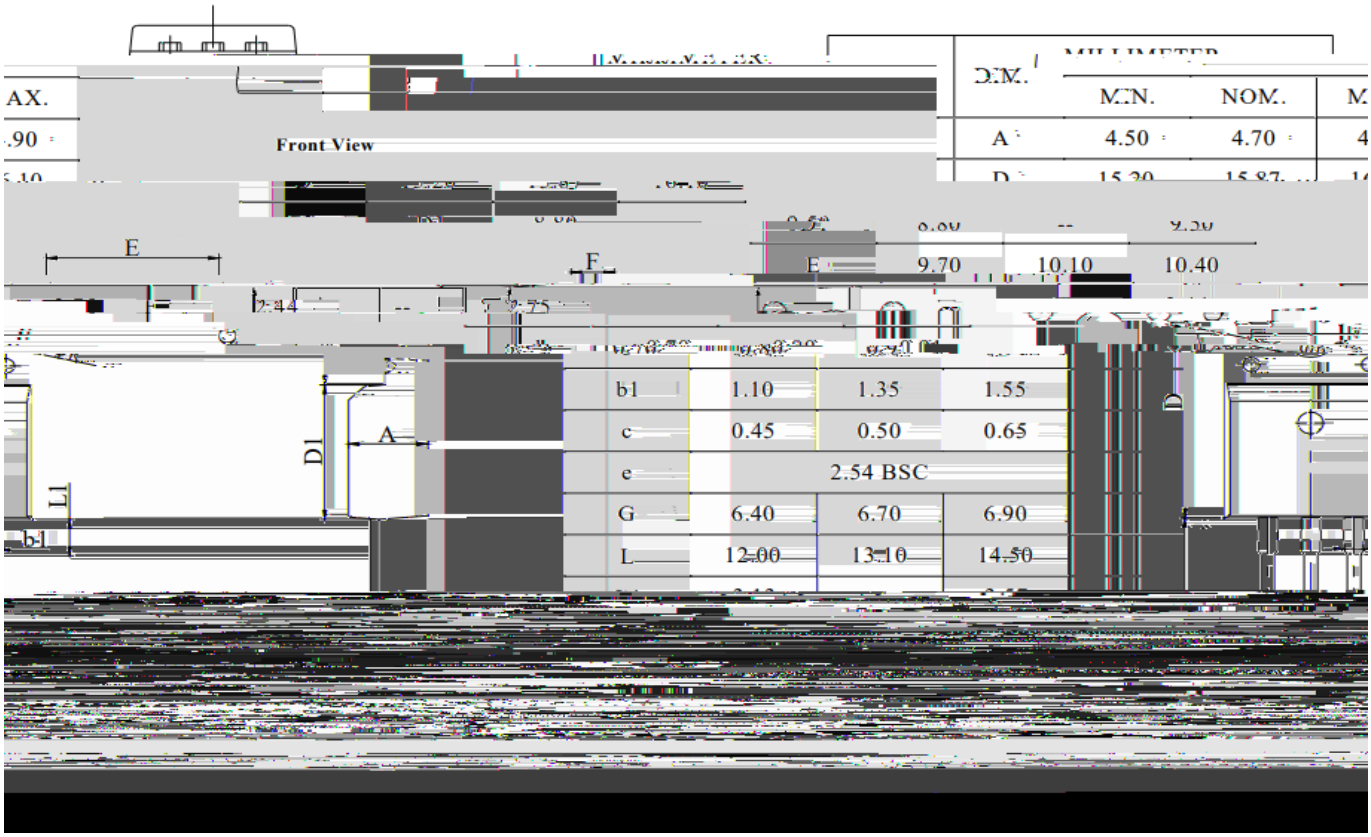
Typical Performance Characteristics

Test Circuit

Figure 1: Gate Charge Test Circuit & Waveform

Package Mechanical Data(TO-220F-3L)

Package Outline



DIM.	MILLIMETER		
	MIN.	NOM.	M
A	4.50	4.70	4
D	15.20	15.87	
E	9.70	10.10	10.40
b1	1.10	1.35	1.55
c	0.45	0.50	0.65
e		2.54 BSC	
G	6.40	6.70	6.90
L	12.00	13.10	14.50