

Description

EHV6549RNT N-channel Enhancement Mode Power MOSFET

Features

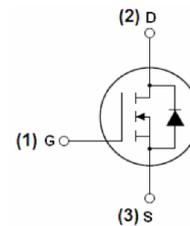
- 650V, 16A
- $R_{DS(ON)}=0.55\Omega @ V_{GS}=10V$
- Fast switching capability
- Robust design with better EAS performance
- Excellent stability and uniformity

Application

- Consumer electronics power supply
- LCD/LED/PDP
- Portable digital power management
- PFC



TO-220F



Schematic Diagram

Package Marking and Ordering Information

Device Marking	Device	OUTLINE	Device Package	TUBE (PCS)	Inner BOX (PCS)	Per Carton (PCS)
EHV6549RNT	EHV6549RNT	TAPING	TO-220F	13inch	2500	25000

Absolute Maximum Ratings ($T_C=25^\circ C$ unless otherwise specified)

Symbol	Parameter	Max.	Units
V_{DSS}	Drain-Source Voltage	650	V
V_{GSS}	Gate-Source Voltage	± 30	V
I_D	Continuous Drain Current	16	A
I_{DM}	Pulsed Drain Current ^{note1}	64	A
E_{AS}	Single Pulsed Avalanche Energy ^{note2}	800	mJ
P_D	Power Dissipation TO-220F $T_C = 25^\circ C$ Derate above $25^\circ C$	70	W
$R_{\theta JC}$	Thermal Resistance, Junction to Case	1.79	$^\circ C/W$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	62	$^\circ C/W$
T_J, T_{STG}	Operating and Storage Temperature Range	-55 to +150	$^\circ C$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	650	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =650V, V _{GS} =0V	-	-	1.0	μA
I _{GSS}	Gate to 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 =250μA	2	3	4	V
R _{DS(on)}	Static Drain-Source on-Resistance	V _{GS} =10V, I _D =8A	-	490	550	mΩ
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1MHz	-	2540	-	pF
C _{oss}	Output Capacitance		-	218	-	pF
C _{rss}	Reverse Transfer Capacitance		-	18	-	pF
Q _g	Total Gate Charge	V _{DS} =325V, I _D =8A, V _{GS} =10V	-	54	-	nC
Q _{gs}	Gate-Source Charge		-	10	-	nC
Q _{gd}	Gate-Drain("Miller") Charge		-	21	-	nC
Switching Characteristics						
t _{d(on)}	Turn-on Delay Time	V _{DS} =325V, I _D =8A, R _{GEN} =3Ω	-	30	-	ns
t _r	Turn-on Rise Time		-	70	-	ns
t _{d(off)}	Turn-off Delay Time		-	145	-	ns
t _f	Turn-off Fall Time		-	74	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
V _{SD}	Drain to Source Diode Forward Voltage	V _{GS} =0V, I _S =16A	-	-	1.5	V
t _{rr}	Body Diode Reverse Recovery Time	I _S =16A, V _{GS} =0V, di/dt=100A/μs	-	410	-	ns
Q _{rr}	Body Diode Reverse Recovery Charge		-	3.5	-	uC

Typical Performance Characteristics

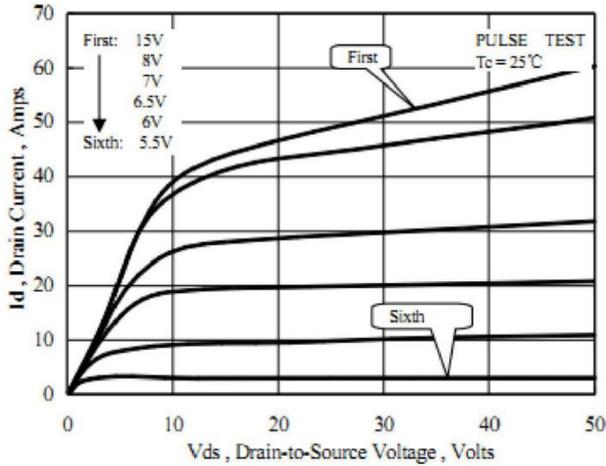


Figure 1. Typical Output Characteristics

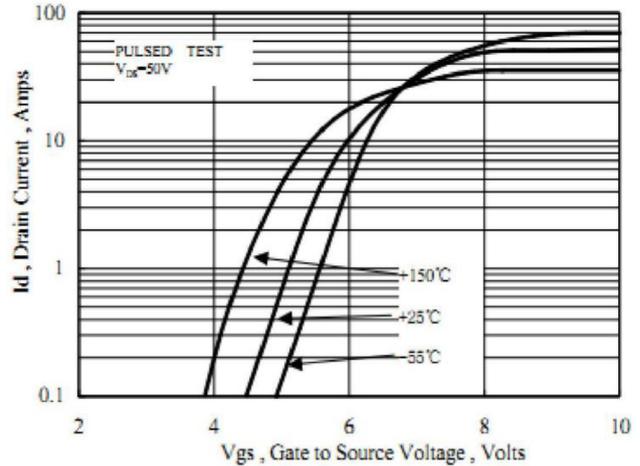


Figure 2. Transfer Characteristics

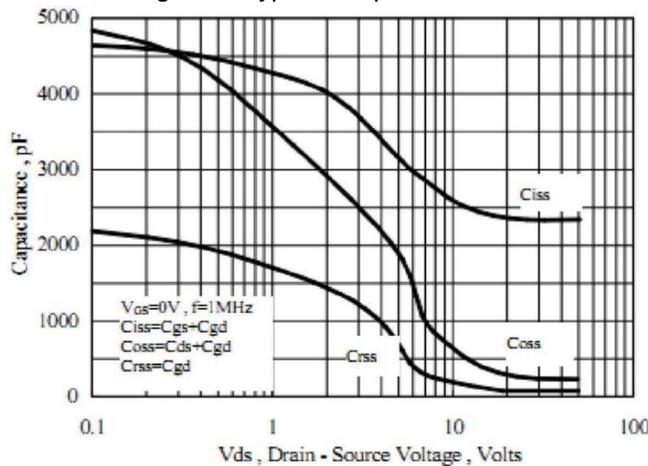


Figure 3. Typical Capacitances

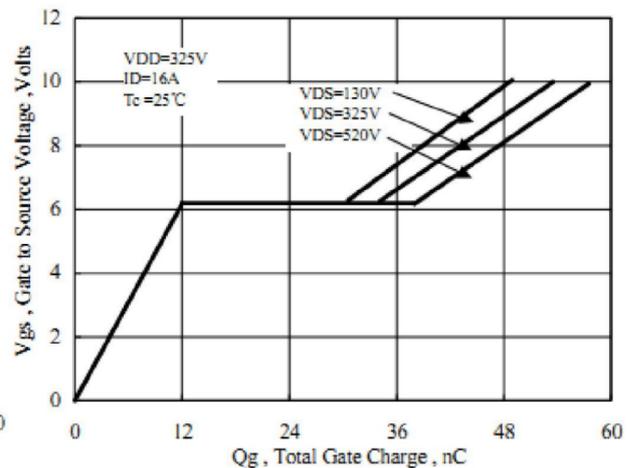


Figure 4. Typical Gate Charge

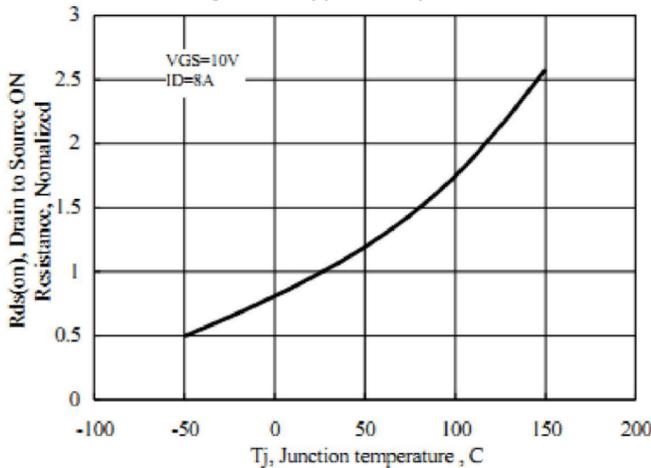


Figure 5. Drain Current On-State Resistance

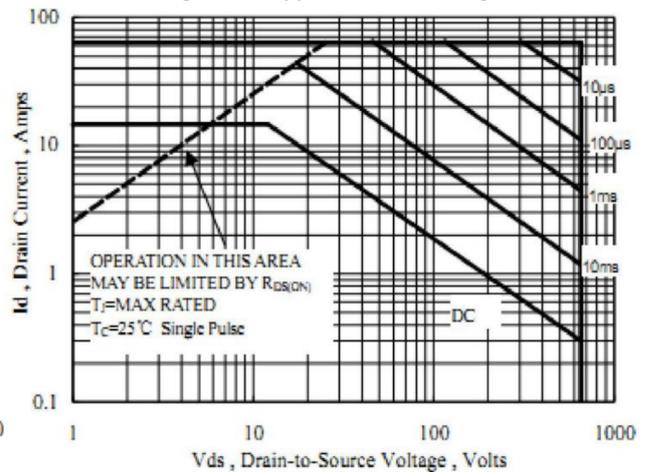
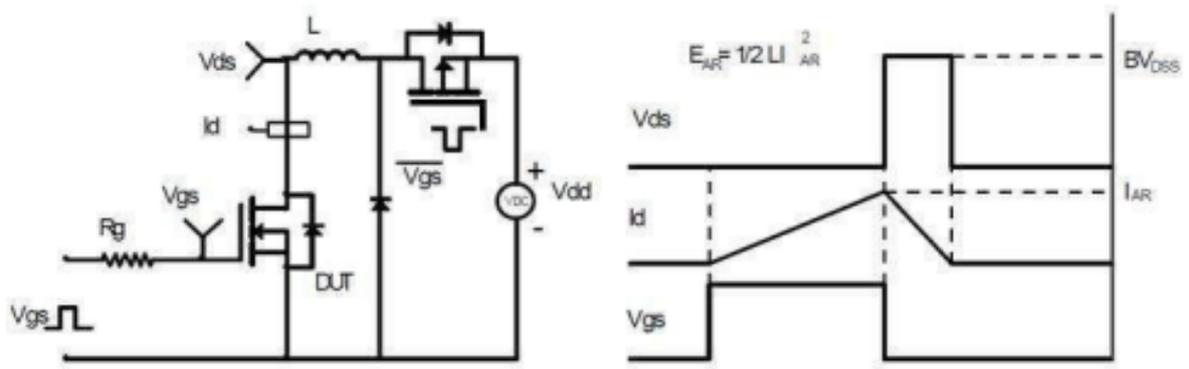
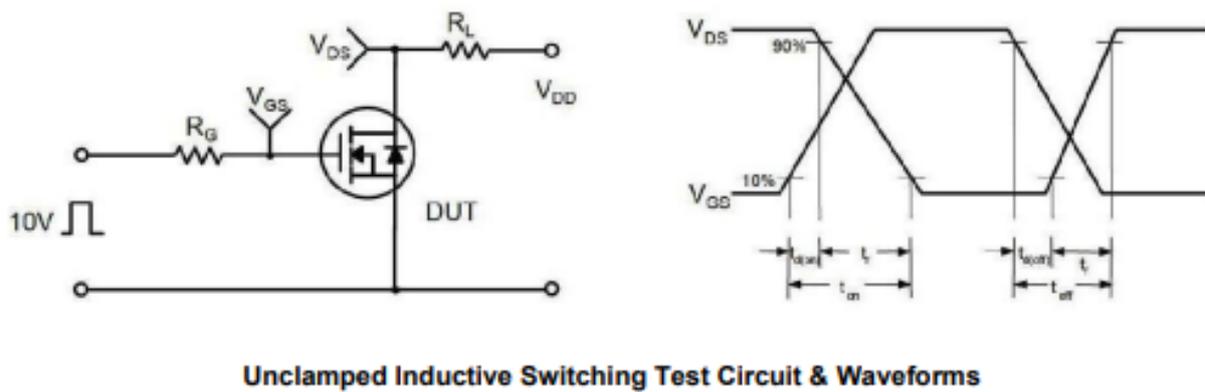
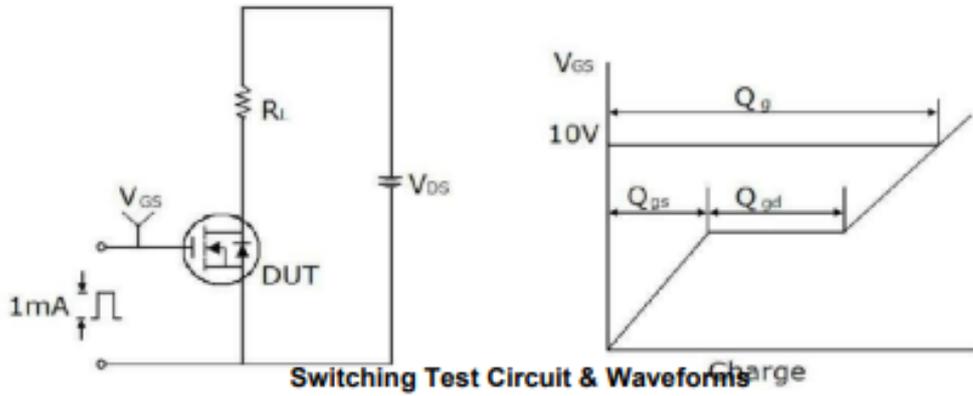


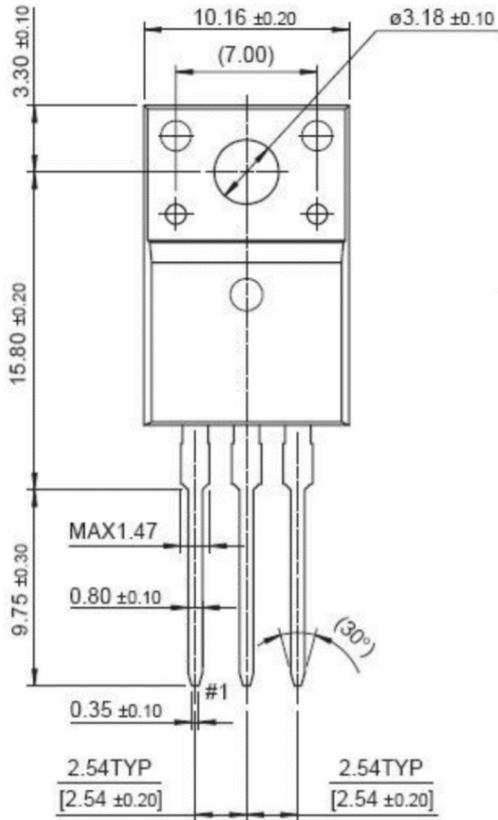
Figure 6. Safe Operation Area

Test Circuit

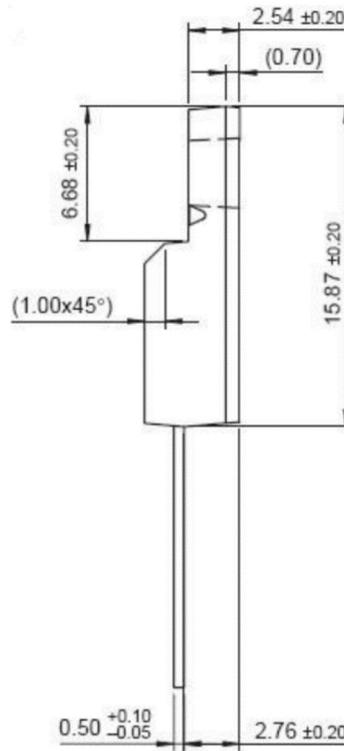


Package Mechanical Data-TO-220F

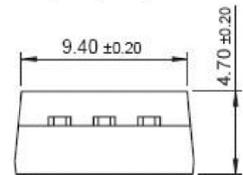
TO-220F



Top View



Side View



Side View

Product Naming Rules

