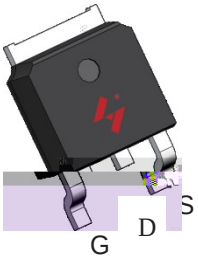
Single N-Channel Enhancement Mode MOSFET

Feature

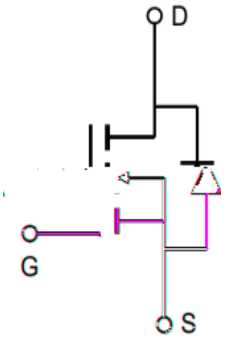
- 30V/80A
  $R_{DS(ON)}$= 3.8 mΩ(typ.) @V_{GS} = 10V
  $R_{DS(ON)}$= 5.1 mΩ(typ.) @V_{GS} = 4.5V
- 100% Avalanche Tested
- Reliable and Rugged
- Halogen- Free Devices Available

Pin Description



Applications

- Load Switch
- Li-battery protection



Single N-Channel MOSFET

Ordering and Marking Information

D G045N03 XYMXXXXXX	Package Code D: TO-252-2L Date Code XYMXXXXXX

Note: HUAYI lead-free products contain molding compounds/die attach materials and 100% matte tin plate Termi-Nation finish;which are fully compliant with RoHS. HUAYI lead-free products meet or exceed the lead-Free require-ments of IPC/JEDEC J-STD-020 for MSL classification at lead-free peak reflow temperature. HUAYI defines “Green” to mean lead-free (RoHS compliant) and halogen free (Br or Cl does not exceed 900ppm by weight in homogeneous material and total of Br and Cl does not exceed 1500ppm by weight).

HUAYI reserves the right to make changes, corrections, enhancements, modifications, and improvements to this pr-oduct and/or to this document at any time without notice.

Absolute Maximum Ratings

Symbol	Parameter		Rating	Unit
Common Ratings (Tc=25 Unless Otherwise Noted)				
V_{DSS}	Drain-Source Voltage		30	V
V_{GSS}	Gate-Source Voltage		20	V
T_J	Junction Temperature Range		-55 to 175	
T_{STG}	Storage Temperature Range		-55 to 175	
I_S	Source Current-Continuous(Body Diode)	Tc=25		A
Mounted on Large Heat Sink				
I_{DM}	Pulsed Drain Current *	Tc=25	290	A
I_D	Continuous Drain Current	Tc=25	80	A
		Tc=100	56	A
P_D	Maximum Power Dissipation	Tc=25	57	W
		Tc=100	28	W
R_{JC}				

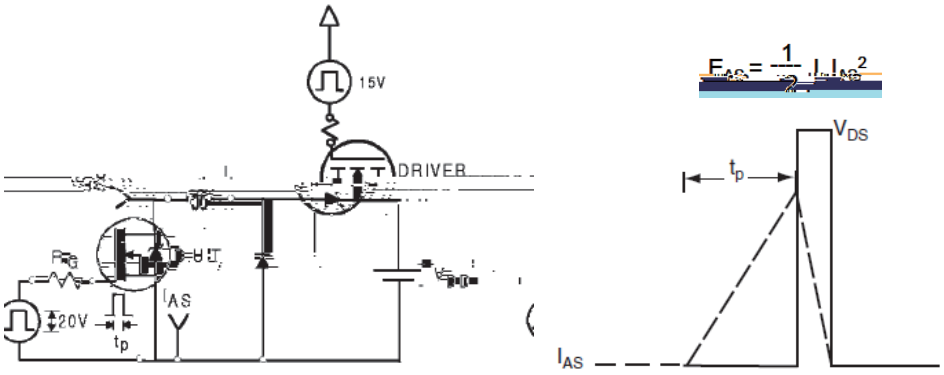
Electrical Characteristics (Cont.) (Tc =25 Unless Otherwise Noted)

Symbol	Parameter	Test Conditions	HYG045N03LA1			Unit
			Min	Typ.	Max	
Dynamic Characteristics						
R_G	Gate Resistance	V_{GS}=0V,V_{DS}=0V,F=1MHz	-	10	-	
C_{iss}	Input Capacitance	V_{GS}=0V,	-	2156	-	pF
C_{oss}	Output Capacitance	V_{DS}=25V,	-	270	-	
C_{rss}	Reverse Transfer Capacitance	Frequency=1.0MHz	-	221	-	
$t_{d(ON)}$	Turn-on Delay Time	V_{DD}=15V,R_G=4Ω, I_{DS}=20A,V_{GS}=10V	-	7	-	ns
T_r	Turn-on Rise Time		-	61	-	
$t_{d(OFF)}$	Turn-off Delay Time		-	101	-	
T_f	Turn-off Fall Time		-	66	-	
Gate Charge Characteristics						
Q_g	Total Gate Charge V_{GS}=4.5V)	V_{DS} =24V, V_{GS}=10V, I_D=20A	-	47	-	nC
Q_g			-	26	-	
Q_{gs}	Gate-Source Charge		-	7	-	
Q_{gd}	Gate-Drain Charge		-			

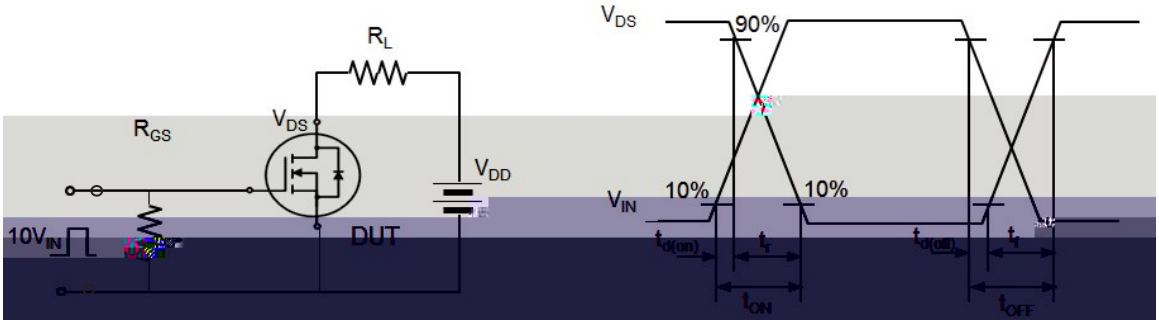
Z jc Normalized Tr


Is-Source Current (A)
VGS-

Avalanche Test Circuit



Switching Time Test Circuit



Gate Charge Test Circuit

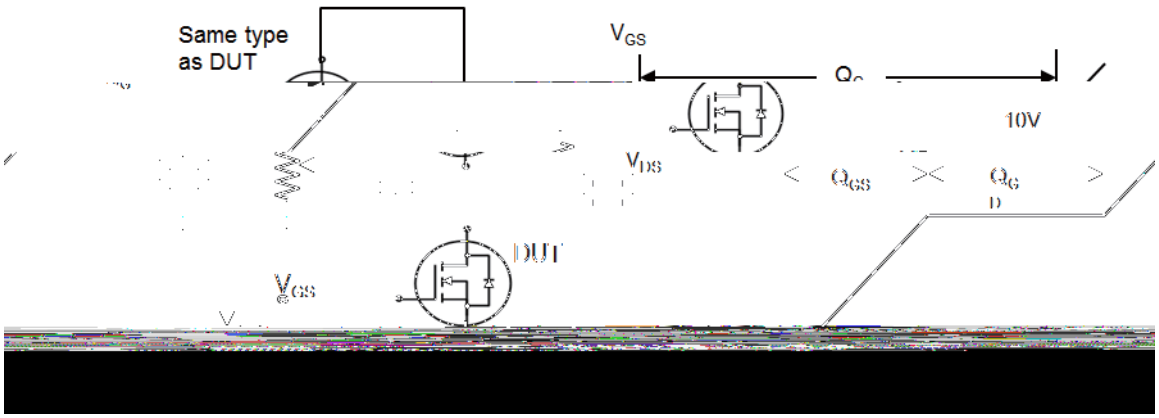


Table 1.SnPb Eutectic Process – Classification Temperatures (Tc)

Package Thickness	Volume mm <350	Volume mm 350
2.5 mm	235	220
≥2.5 mm	220	220

Table 2.Pb-free Process – Classification Temperatures (Tc)

Package Thickness	Volume mm <350	Volume mm 350-2000	Volume mm 2000
<1.6 mm	260	260	260
1.6 mm –			