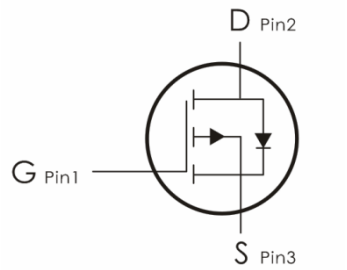
Description：

This P-Channel MOSFET uses advanced trench technology and design to provide excellent $R_{DS(on)}$ with low gate charge.

It can be used in a wide variety of applications.



Features：

1) V_{DS}=-60V,I_D=-85A,$R_{DS(ON)}$<14mΩ @V_{GS}=-10V（Typ：12mΩ）
2) Low gate charge.
3) Green device available.
4) Advanced high cell denity trench technology for ultra low $R_{DS(ON)}$.
5) Excellent package for good heat dissipation.

Package Marking and Ordering Information：

Part NO.	Marking	Package	Packing
DOP85P06	85P06	TO- 220	50 pcs/Tube

Absolute Maximum Ratings：（T_C=25℃ unless otherwise noted）

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	-60	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Curren	-85	A
	Continuous Drain Current-T_C=100℃	-50	
I_{DM}	Pulsed Drain Current[1]	-265	
P_D	Power Dissipation	130	W
E_{AS}	Single pulse avalanche energy[2]	515	mJ
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55-+175	℃

Thermal Characteristics：

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance,Junction to Case	0.96	℃/W

Electrical Characteristics: (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Sourtce Breakdown Voltage	V_{GS}=0V,I_D=250μA	-60	-72	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V, V_{DS}=-60V	---	---	-1	μA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V, V_{DS}=0A	---	---	±100	nA
On Characteristics						
$V_{GS(th)}$	Gate-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	-1	-1.8	2.5	V
$R_{DS(ON)}$	Drain-Source On Resistance	V_{GS}=-10V,I_D=-20A	---	12	14	mΩ
		V_{GS}=-4.5V,I_D=-15A	---	14.3	18.6	mΩ
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=-25V, V_{GS}=0V, f=1MHz	---	8699	---	pF
C_{oss}	Output Capacitance		---	289	--	
C_{rss}	Reverse Transfer Capacitance		---	209	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=-30V, R_{ENG}=3Ω ,V_{GS}=-10V	---	25	---	ns
t_r	Rise Time		---	20	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	137	---	ns
t_f	Fall Time		---	29	---	ns
Q_g	Total Gate Charge	V_{GS}=-10V, V_{DS}=-30V, I_D=-20A	---	139	---	nc
Q_{gs}	Gate-Source Charge		---	18	---	nc
Q_{gd}	Gate-Drain “Miller” Charge		---	27	---	nc
Drain-Source Diode Characteristics						
V_{SD}	Diode Forward Voltage[3]	V_{GS}=0V, I_{SD}=-20A	---	---	1.2	V
I_S	Continuous Drain Curren	V_D=V_G=0V	---	---	-85	A
I_{SM}	Pulsed Drain Current		---	---	-265	A
Trr	Reverse Recovery Time	I_F=20A,T_J=25℃ dI/dt=100A/us	---	56	---	ns
Qrr	Reverse Recovery Charge		---	63	---	nc

Notes:

1.Repetitive Rating: Pulse width limited by maximum junction temperature.

2.E_{AS} condition: T_J=25℃,V_{DD}=40V,V_G=-10V, Rg=25Ω, L=0.5mH.

3.Repetitive Rating: Pulse width limited by maximum junction temperature.

Typical Characteristics: (T_C=25℃ unless otherwise noted)

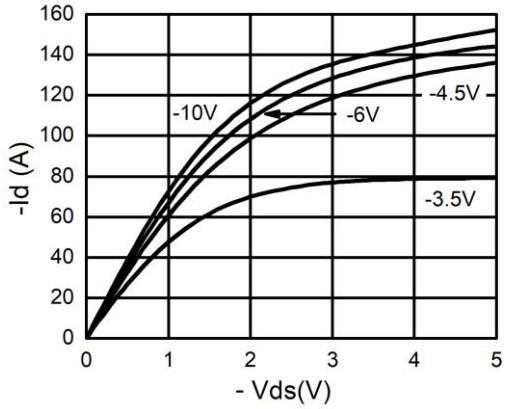


Figure 1. Output Characteristics

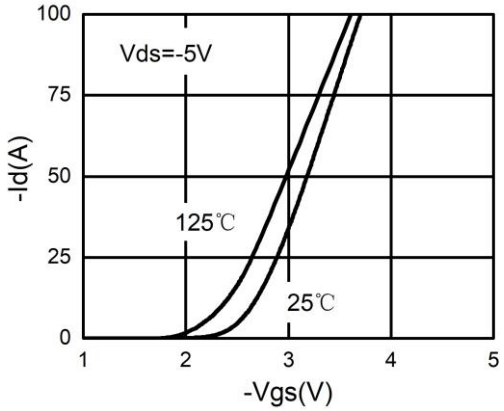


Figure 2. Transfer Characteristics

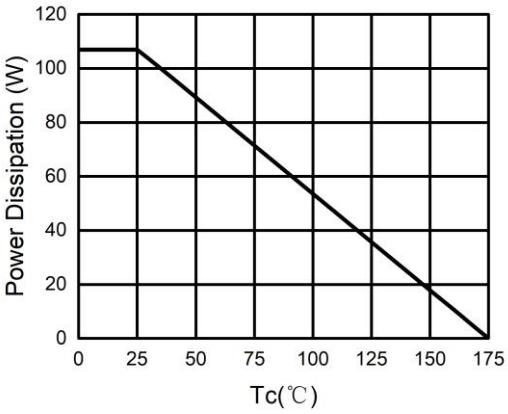


Figure 3. Power Dissipation

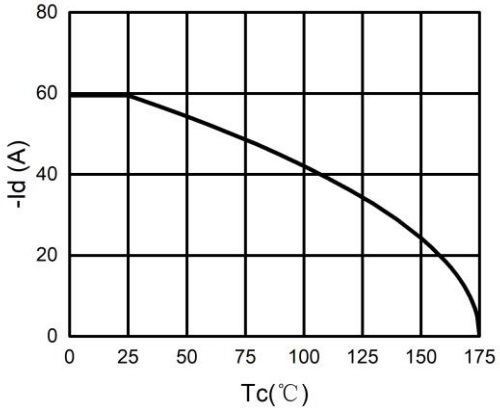


Figure 4. Drain Current

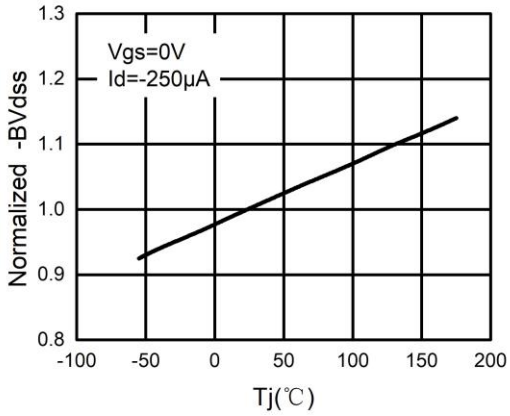


Figure 5. BV_{DSS} vs Junction Temperature

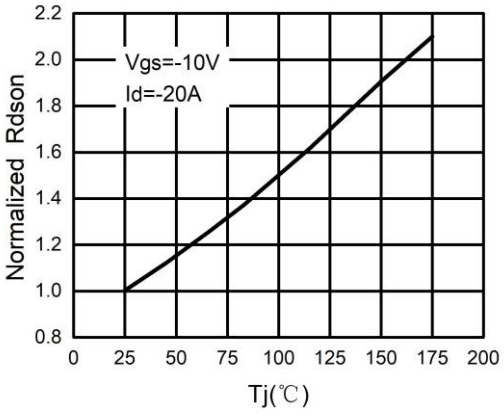


Figure 6. $R_{DS(ON)}$ vs Junction Temperature

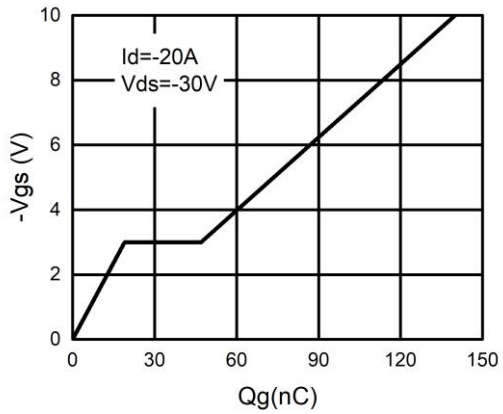


Figure 7. Gate Charge Waveforms

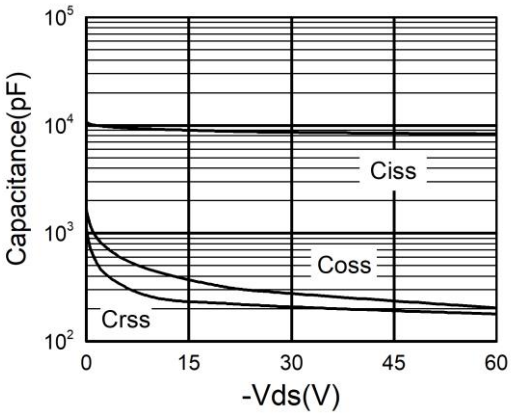


Figure 8. Capacitance

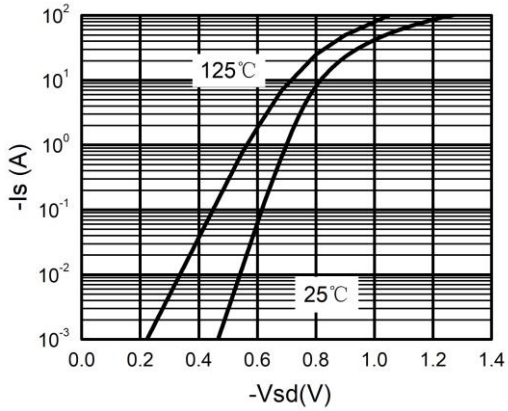


Figure 9. Body-Diode Characteristics

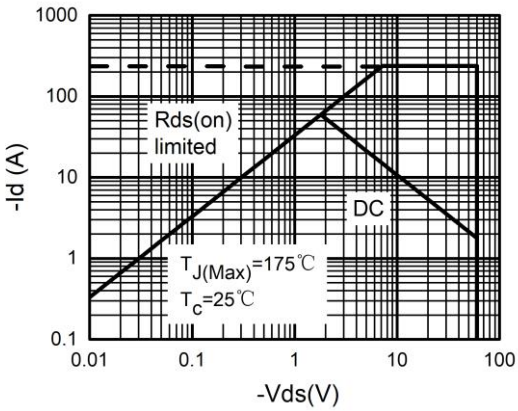
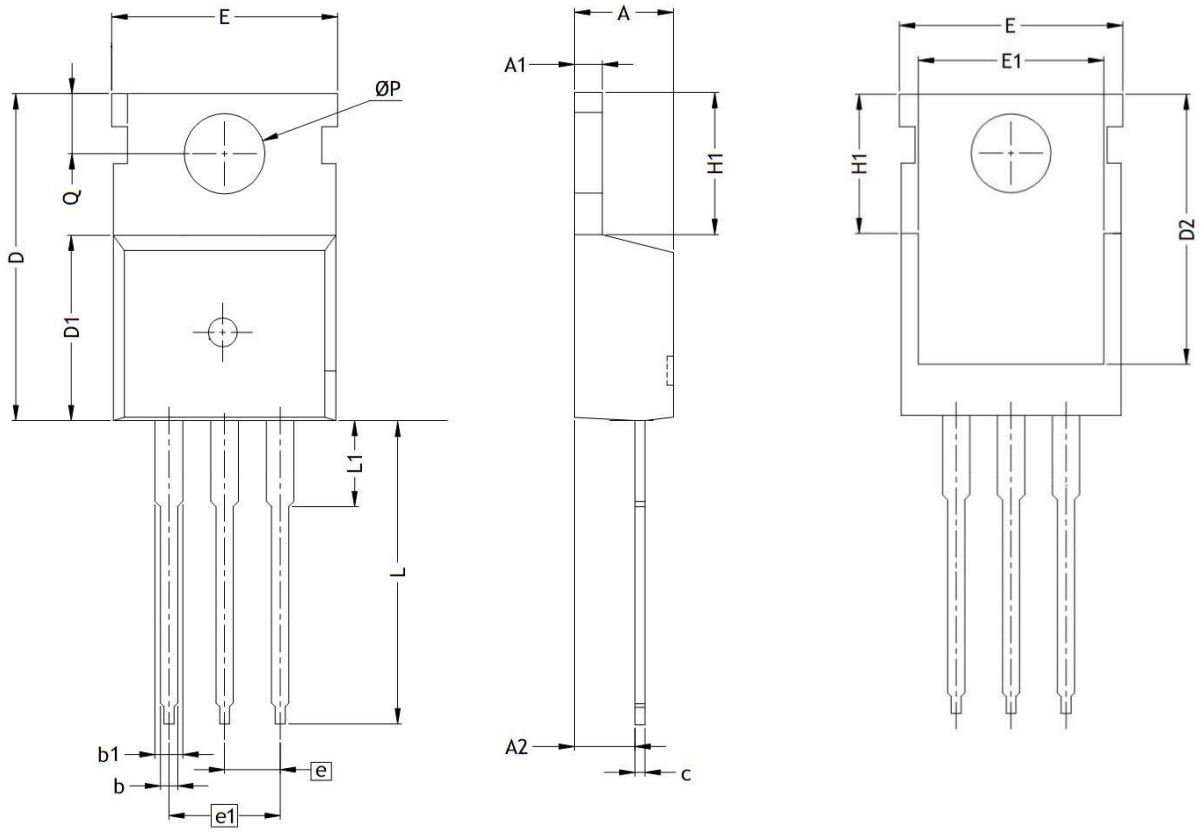


Figure 10. Maximum Safe Operating Area

TO-220 Package Information：



UNIT：mm

SYMBOLS	A	A1	A2	b	b1	c	D	D1	D2	E	E1	e
MIN	4.25	1.25	2.35	0.7	1.15	0.45	14.35	8.80	13.05	9.90	7.85	2.540
MAX	4.65	1.35	2.55	0.9	1.75	0.60	15.95	9.50	13.65	10.35	8.85	BSC
SYMBOLS	e1	H1	L	L1	Q	ϕP						
MIN	5.080	6.30	12.85	2.85	2.70	3.50						
MAX	BSC	6.65	13.50	3.25	2.90	3.70						

Marking Information：

①. Doingter LOGO

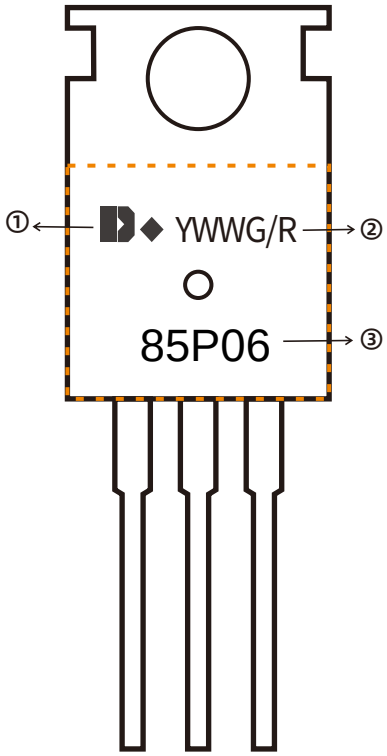
②. Date Code(YWWG / R)

Y : Year Code , last digit of the year

WW : Week Code(01-53)

G/R : G(Green) /R(Lead Free)

③. Part NO.



Previous Version

Version	Date	Subjects (major changes since last revision)
1.0	2024-07-02	Release of final version

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