

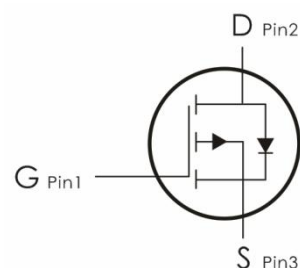
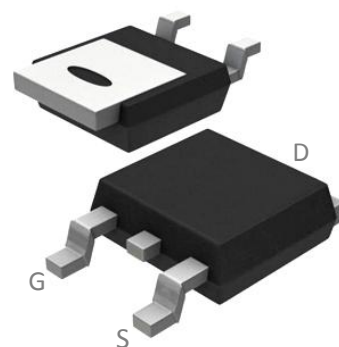
Description:

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) $V_{DS}=-60V, I_D=-100A, R_{DS(on)} < 8\text{ m}\Omega @ V_{GS}=-10V$
- 2) Low gate charge.
- 3) Green device available.
- 4) Advanced high cell density 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
DE008TPG	E008TP	TO- 252	2500 pcs/Reel

Absolute Maximum Ratings: ($T_C=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	-60	V
V_{GS}	Gate-Source Voltage	± 18	V
I_D	Continuous Drain Current	-100	A
	Continuous Drain Current- $T_C=100^\circ\text{C}$	-60	
I_{DM}	Pulsed Drain Current ¹	-300	
P_D	Power Dissipation ³	83	W
E_{AS}	Single pulse avalanche energy ²	506	mJ
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55-+150	$^\circ\text{C}$

Thermal Characteristics:

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case	1.5	$^\circ\text{C}/\text{W}$

R_{θJA}	Thermal Resistance, Junction to Ambient ⁴	55	°C/W
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Electrical Characteristics: (T_c=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250 μ A	-60	---	---	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} =0V, V _{DS} =-60V	---	---	-1	μ A
I _{GSS}	Gate-Source Leakage Current	V _{GS} =± 18V, V _{DS} =0A	---	---	± 100	nA
On Characteristics						
V _{GS(th)}	GATE-Source Threshold Voltage	V _{GS} =V _{DS} , I _D =250 μ A	-2	-2.6	-3.5	V
R _{DS(ON)}	Drain-Source On Resistance	V _{GS} =-10V, I _D =-20A	---	6.3	8	m Ω
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =-30V, V _{GS} =0V, f=1MHz	---	5599	---	pF
C _{oss}	Output Capacitance		---	749	--	
C _{rss}	Reverse Transfer Capacitance		---	89	---	
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time	V _{DS} =-30V, I _D =-40A, R _{ENG} =2.2 Ω ,V _{GS} =-10V	---	14	---	ns
t _r	Rise Time		---	49	---	ns
t _{d(off)}	Turn-Off Delay Time		---	134	---	ns
t _f	Fall Time		---	159	---	ns
Q _g	Total Gate Charge	V _{GS} =-10V, V _{DS} =-30V, I _D =-40A	---	81	---	nc
Q _{gs}	Gate-Source Charge		---	24	---	nc
Q _{gd}	Gate-Drain “Miller” Charge		---	16	---	nc
Drain-Source Diode Characteristics						
I _S	Continuous Drain Curren	VD=VG=0V	---	---	-100	A
I _{SM}	Pulsed Drain Current		---	---	-300	A

Notes:

1. Repetitive rating; pulse width limited by max. junction temperature.
2. T_J=25°C, V_{DD}=-30V, V_G=-10V, R_G=25Ω, L=2mH, I_{AS}=-22.5A.
3. P_d is based on max. junction temperature, using junction-case and junction-ambient thermal resistance.
4. The value of R_{θJA} is measured with the device mounted on the minimum recommend pad size, in the still air environment with T_A=25°C. The maximum allowed junction temperature of 150°C. The value in any given application depends on the user's specific board design.

Typical Characteristics: ($T_c=25^{\circ}\text{C}$ unless otherwise noted)

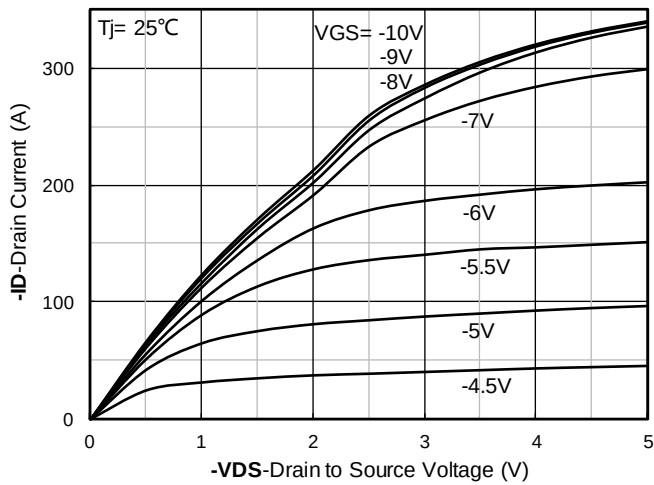


Figure 1. Output Characteristics

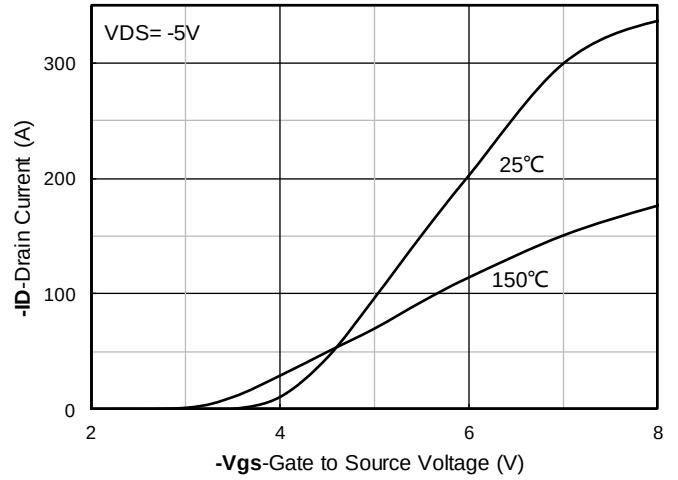


Figure 2. Transfer Characteristics

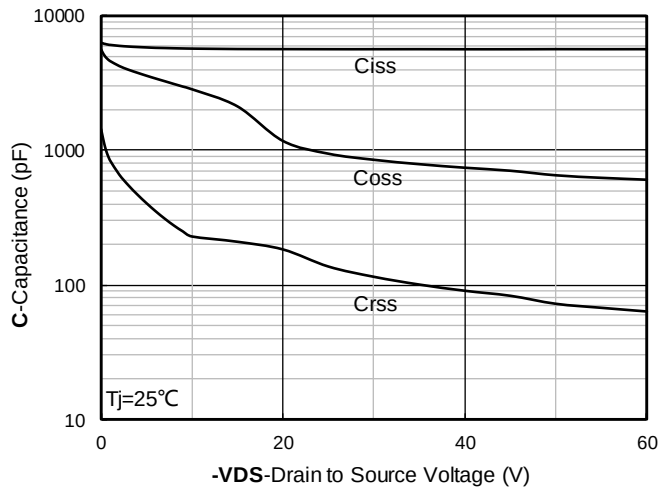


Figure 3. Capacitance Characteristics

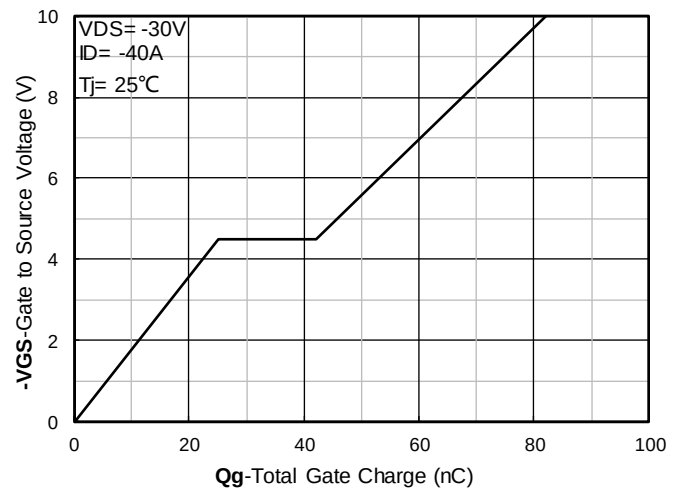


Figure 4. Gate Charge

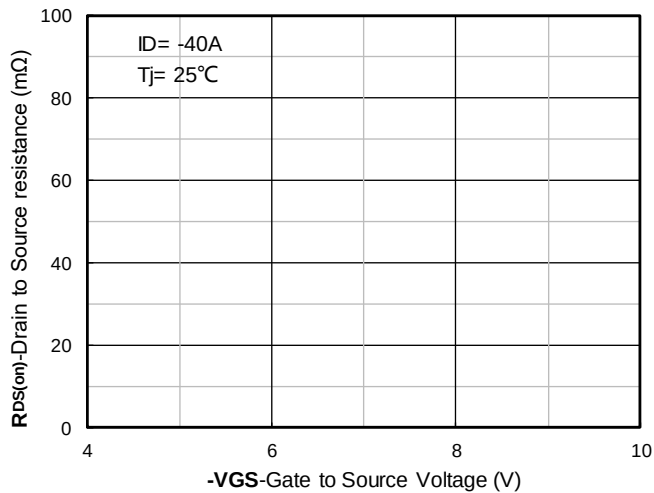


Figure 5. On-Resistance vs Gate to Source Voltage

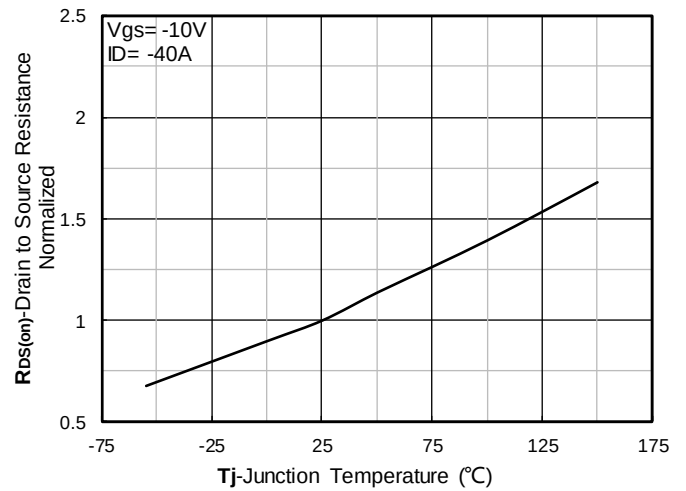


Figure 6. Normalized On-Resistance

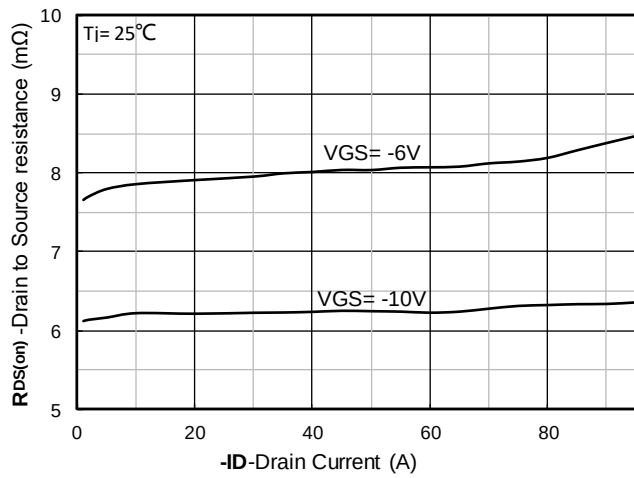


Figure 7. $R_{DS(on)}$ VS Drain Current

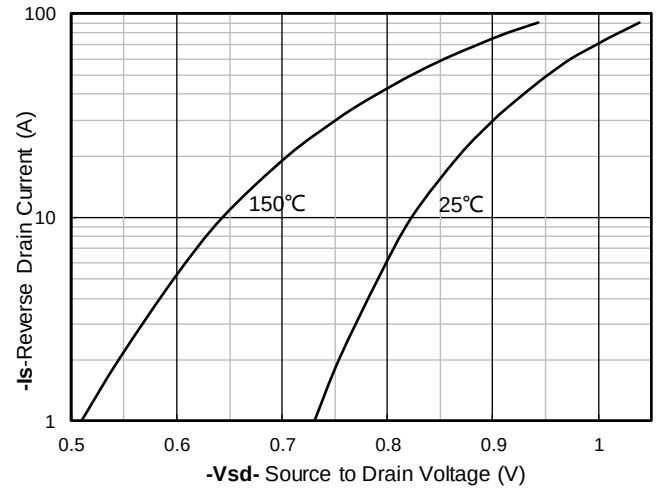


Figure 8. Forward characteristics of reverse diode

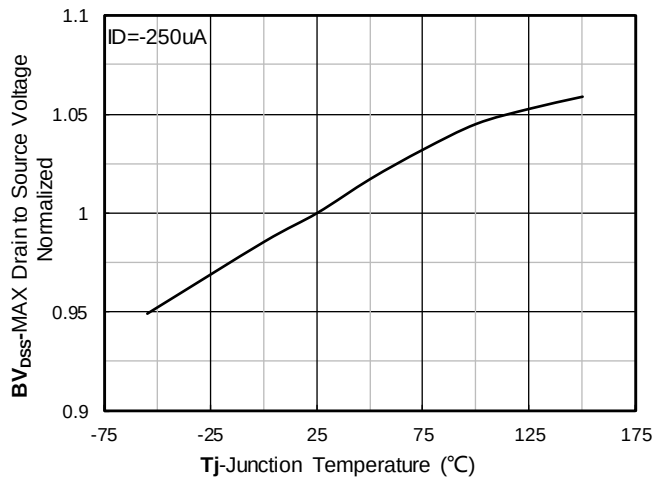


Figure 9. Normalized breakdown voltage

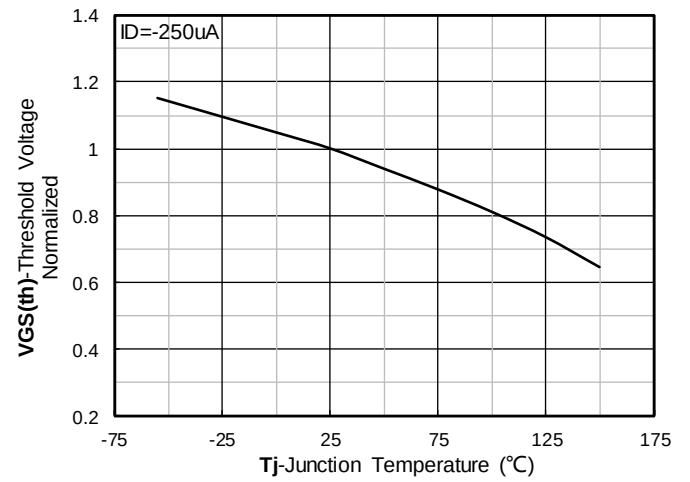


Figure 10. Normalized Threshold voltage

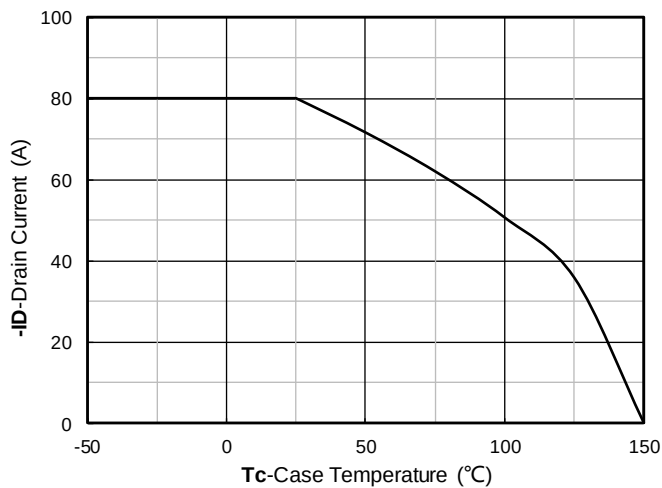


Figure 11. Current dissipation

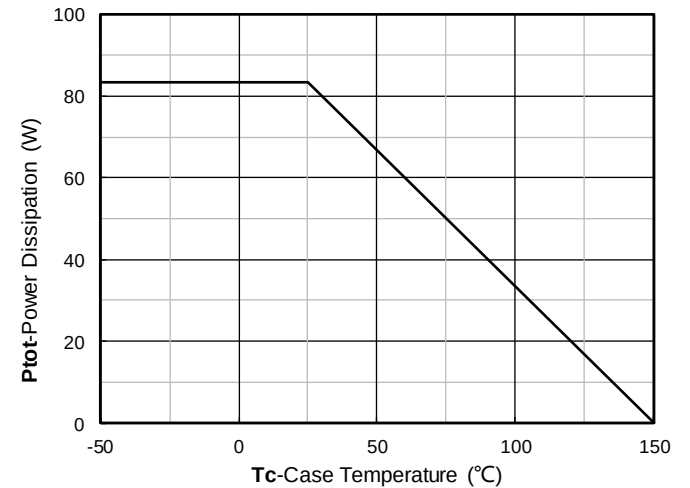
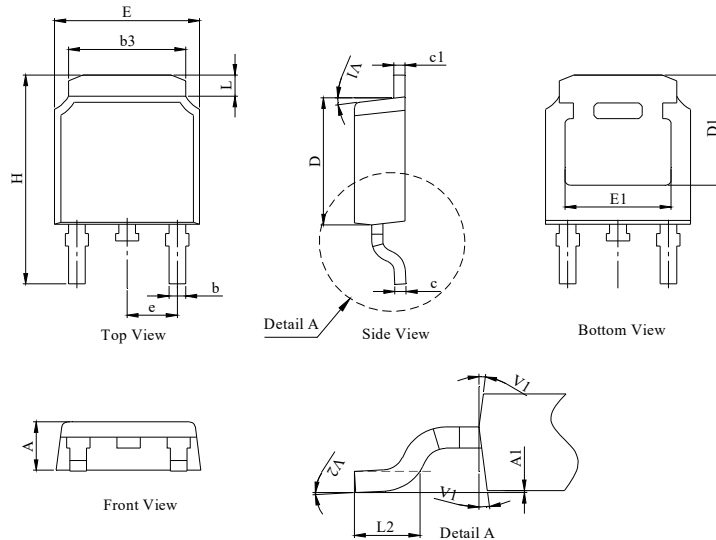


Figure 12. Power dissipation

TO-252 Package Information

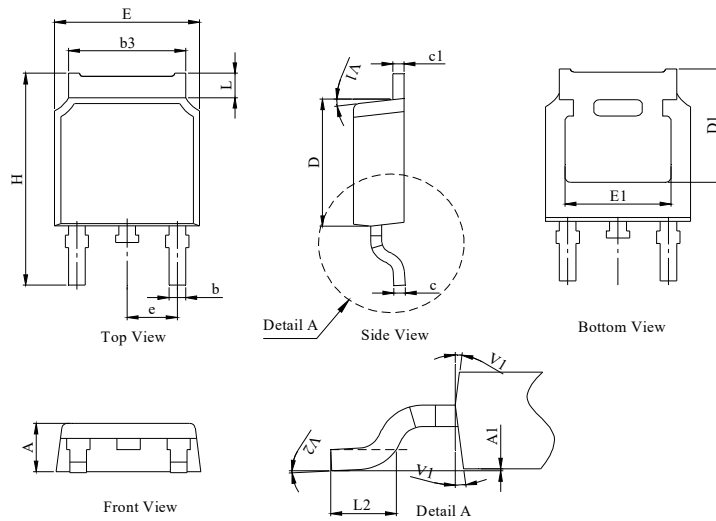
Package Outline Type-A

UNIT: mm



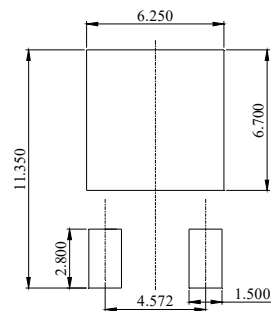
DIM.	MILLIMETER		
	MIN.	NOM.	MAX.
A	2.18	2.30	2.39
A1	0	--	0.13
b	0.64	0.76	0.89
c	0.40	0.50	0.61
c1	0.46	0.50	0.58
D	5.97	6.10	6.23
D1	5.05	--	--
E	6.35	6.60	6.73
E1	4.32	--	--
b3	5.21	5.38	5.55
e	2.29 BSC		
H	9.40	10.00	10.40
L	0.89	--	1.27
L2	1.40	--	1.78
V1	7° REF		
V2	0°	--	6°

Package Outline Type-B



DIM.	MILLIMETER		
	MIN.	NOM.	MAX.
A	2.10	2.30	2.40
A1	0	--	0.13
b	0.66	0.76	0.86
b3	5.21	5.38	5.55
c	0.40	0.50	0.60
c1	0.44	0.50	0.58
D	5.90	6.10	6.30
D1	5.30REF		
E	6.40	6.60	6.80
E1	4.63	-	-
e	2.29 BSC		
H	9.50	10.00	10.70
L	1.09	--	1.21
L2	1.35	--	1.65
V1	7° REF		
V2	0°	--	6°

Recommended Soldering Footprint



Marking Information:

①. Doingter LOGO

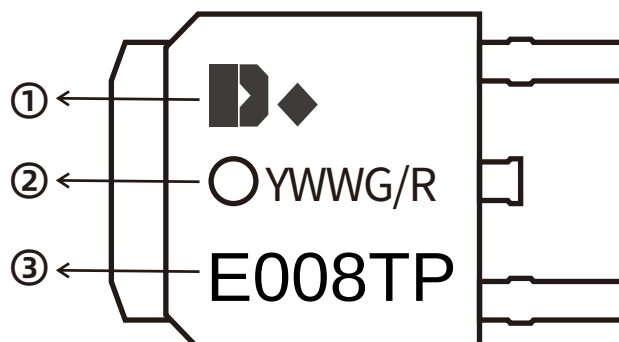
②. Date Code(YWWG / R)

Y : Year Code , last digit of the year

WW : Week Code(01-53)

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

③. Part NO.



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