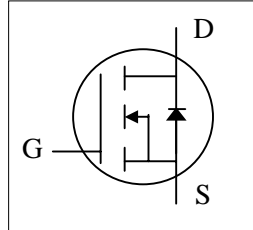




- ▼ Simple Drive Requirement
- ▼ Low On-resistance
- ▼ Fast Switching Characteristic
- ▼ RoHS Compliant & Halogen-Free

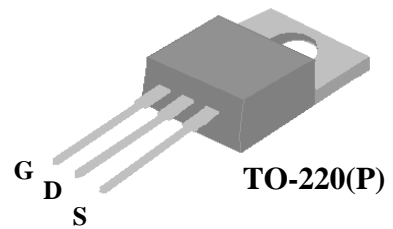


BV_{DSS}	30V
$R_{DS(ON)}$	9.5m Ω
I_D	65A

Description

Advanced Power MOSFETs from APEC provide the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness.

The TO-220 package is widely preferred for commercial-industrial power applications and suited for low voltage applications such as DC/DC converters.



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current, V_{GS} @ 10V	65	A
$I_D@T_C=100^\circ\text{C}$	Continuous Drain Current, V_{GS} @ 10V	47	A
I_{DM}	Pulsed Drain Current ¹	190	A
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation	70	W
T_{STG}	Storage Temperature Range	-55 to 175	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 175	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Value	Units
Rthj-c	Maximum Thermal Resistance, Junction-case	2.1	$^\circ\text{C}/\text{W}$
Rthj-a	Maximum Thermal Resistance, Junction-ambient	62	$^\circ\text{C}/\text{W}$



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Electrical Characteristics @T_j=25°C(unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	30	-	-	V
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =10V, I _D =30A	-	-	9.5	mΩ
		V _{GS} =4.5V, I _D =15A	-	-	17	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250uA	1	-	3	V
g _{fs}	Forward Transconductance	V _{DS} =10V, I _D =30A	-	37	-	S
I _{DSS}	Drain-Source Leakage Current	V _{DS} =24V, V _{GS} =0V	-	-	10	uA
I _{GSS}	Gate-Source Leakage	V _{GS} = ±20V, V _{DS} =0V	-	-	±100	nA
Q _g	Total Gate Charge ²	I _D =30A	-	15	24	nC
Q _{gs}	Gate-Source Charge	V _{DS} =24V	-	3	-	nC
Q _{gd}	Gate-Drain ("Miller") Charge	V _{GS} =4.5V	-	10	-	nC
t _{d(on)}	Turn-on Delay Time ²	V _{DS} =15V	-	8	-	ns
t _r	Rise Time	I _D =30A	-	82	-	ns
t _{d(off)}	Turn-off Delay Time	R _G =3.3Ω, V _{GS} =10V	-	20	-	ns
t _f	Fall Time	R _D =0.5Ω	-	8	-	ns
C _{iss}	Input Capacitance	V _{GS} =0V	-	940	1500	pF
C _{oss}	Output Capacitance	V _{DS} =25V	-	260	-	pF
C _{rss}	Reverse Transfer Capacitance	f=1.0MHz	-	180	-	pF
R _g	Gate Resistance	f=1.0MHz	-	0.9	1.4	Ω

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V _{SD}	Forward On Voltage ²	I _S =30A, V _{GS} =0V	-	-	1.2	V
t _{rr}	Reverse Recovery Time ²	I _S =10A, V _{GS} =0V,	-	28	-	ns
Q _{rr}	Reverse Recovery Charge	dI/dt=100A/μs	-	22	-	nC

Notes:

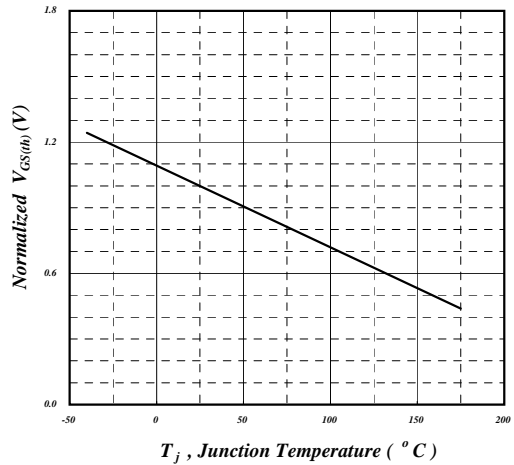
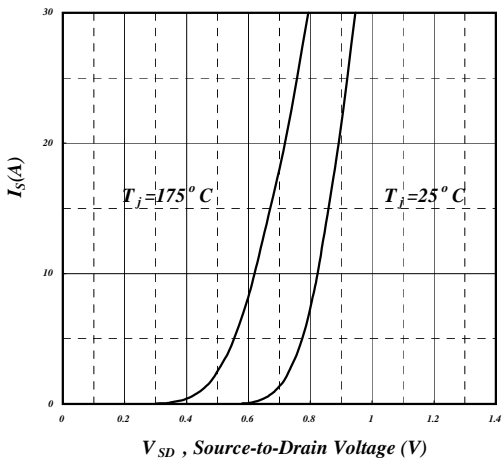
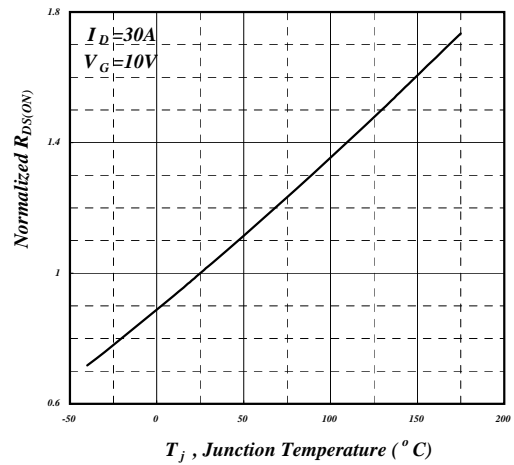
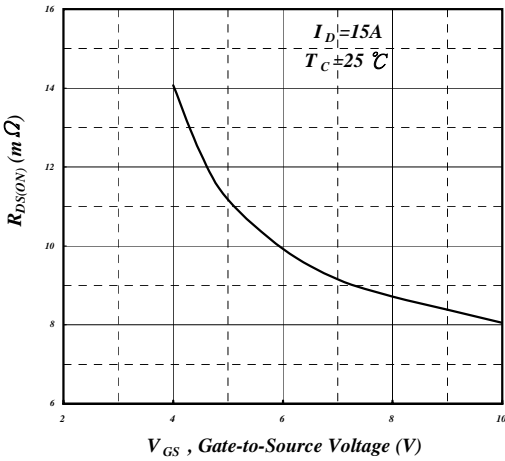
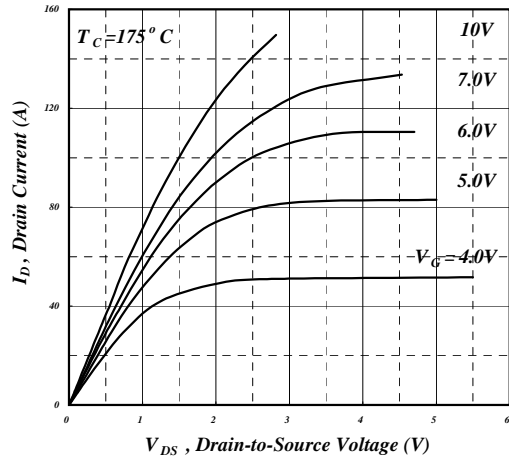
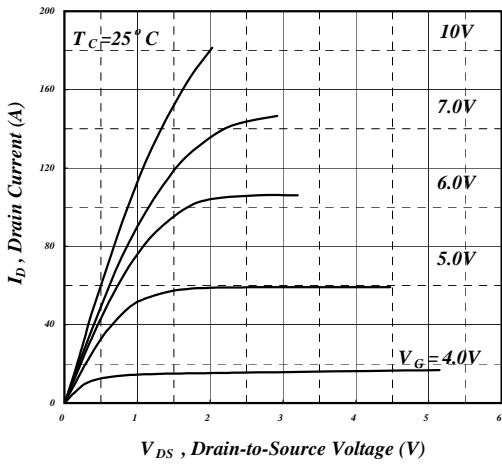
- 1.Pulse width limited by max. junction temperature.
- 2.Pulse test

THIS PRODUCT IS SENSITIVE TO ELECTROSTATIC DISCHARGE, PLEASE HANDLE WITH CAUTION.

USE OF THIS PRODUCT AS A CRITICAL COMPONENT IN LIFE SUPPORT OR OTHER SIMILAR SYSTEMS IS NOT AUTHORIZED.

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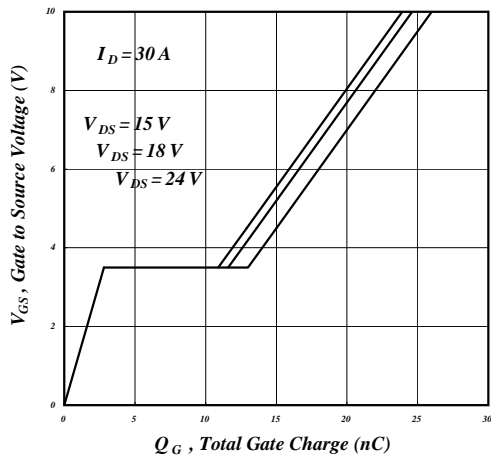


Fig7. Gate Charge Characteristics

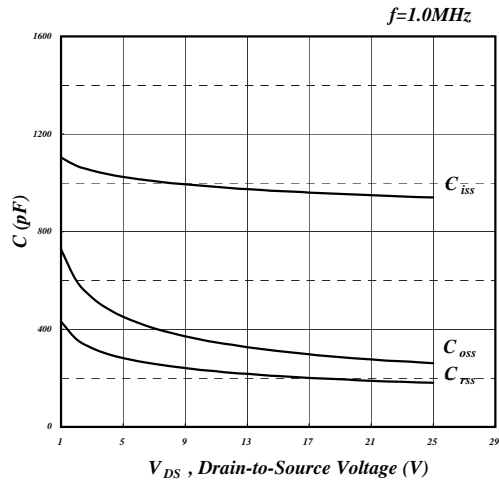


Fig 8. Typical Capacitance Characteristics

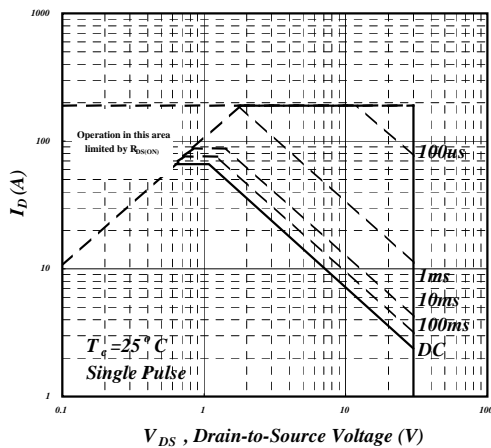


Fig 9. Maximum Safe Operating Area

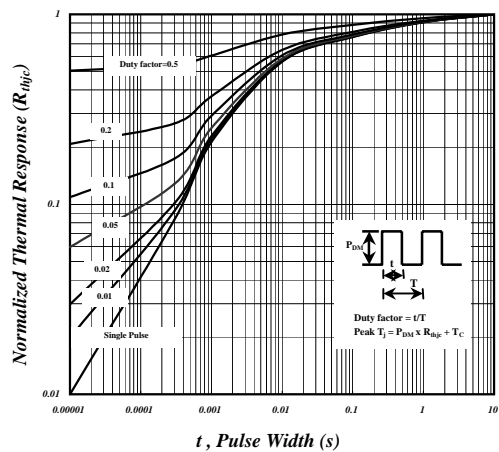


Fig10. Effective Transient Thermal Impedance

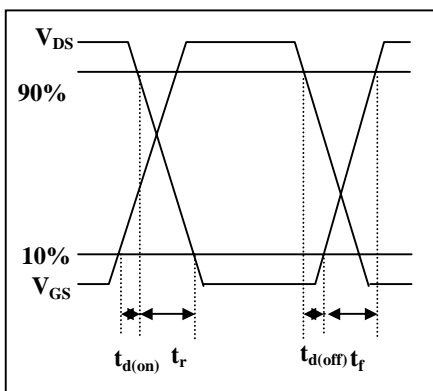


Fig 11. Switching Time Waveform

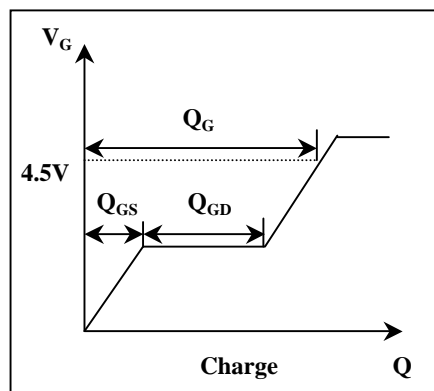


Fig 12. Gate Charge Waveform