

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-200V	0.135Ω@10V	-27A

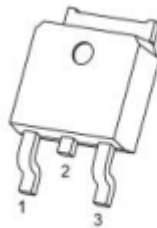
Feature

- Fast Switching
- Low Gate Charge and Rdson
- 100% Single Pulse avalanche energy Test

Application

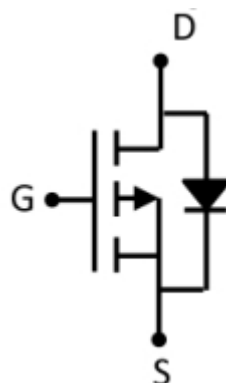
- DC-DC Converter
- Ideal for high-frequency switching and synchronous rectification

Package

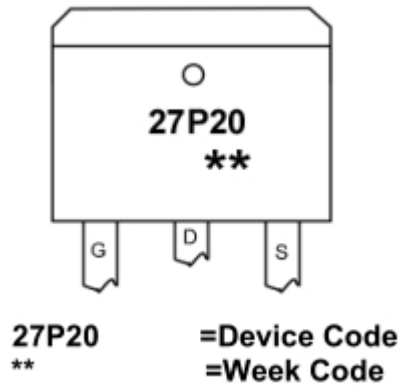


TO-252(G:1 D:2 S:3)

Circuit diagram



Marking



Absolute maximum ratings

(T_a=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain source voltage	V _{DS}	-200	V
Gate source voltage	V _{GS}	±20	V
Continuous drain current(Tc=25°C)	I _D	-27	A
Pulsed drain current ²	I _{DM}	-108	A
Single pulsed avalanche energy ³	E _{AS}	1500	mJ
Total Power Dissipation (Tc=25°C)	P _D	300	W
Thermal resistance, junction-case ¹	R _{θJC}	0.42	°C/W
Drain source voltage	T _{STG}	-55 to 150	°C
Operation and storage temperature	T _J	-55 to 150	°C

Electrical characteristics

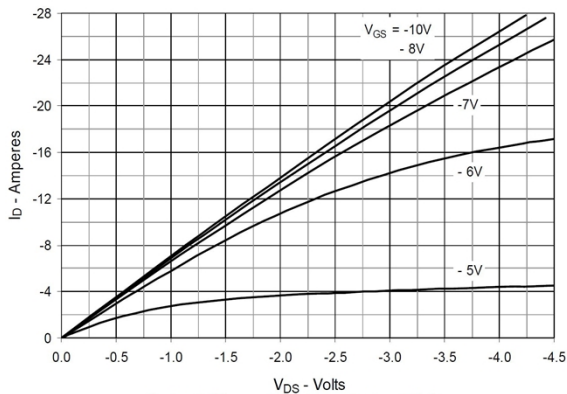
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	$BV_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-200			V
Bvdss Temperature Coefficient	$\Delta BVDSS/\Delta T$	$I_D = -250\mu A$, Reference $25^{\circ}C$		-0.2		
Drain-Source Leakage Current	I_{DSS}	$V_{DS} = -160V, V_{GS} = 0V$, $T_J = 25^{\circ}C$			-100	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	μA
Gate-source threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-2	-3	-4	V
Static Drain-Source on-Resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -13.5A$		-0.135	0.15	Ω
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = -25V, V_{GS} = 0V$, $f = 1MHz$		2780		pF
Output Capacitance	C_{oss}			544		
Reverse Transfer Capacitance	C_{rss}			103		
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = -160V, V_{DS} = -10V$, $I_D = -27A$		52		pF
Gate-Source Charge	Q_{gs}			17		
Gate-Drain Charge	Q_{gd}			20.5		
Turn-On Delay Time	$T_{d(on)}$	$V_{DD} = -100V, V_{GS} = -10V, R_G = 9.1\Omega, I_D = -27A$		24		nS
Rise Time	T_r			61		
Turn-Off Delay Time	$T_{d(off)}$			45		
Fall Time	T_f			37		

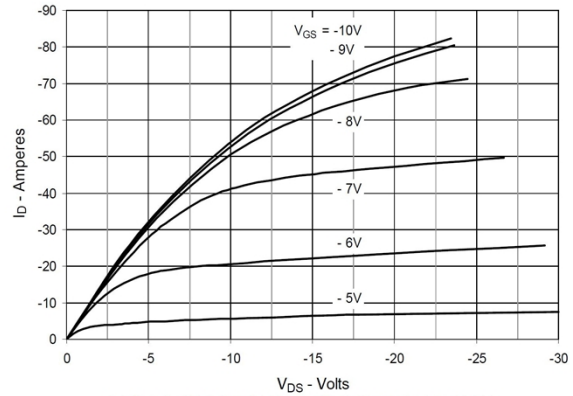
Note:

1. The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
2. The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
3. The EAS data shows Max. rating . The test condition is $I_D = -5A, L = 5mH$

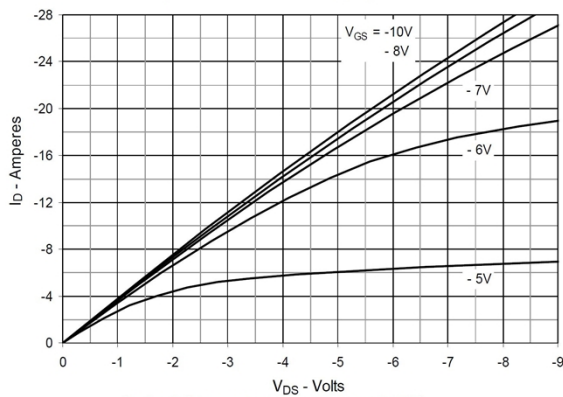
Typical Characteristics



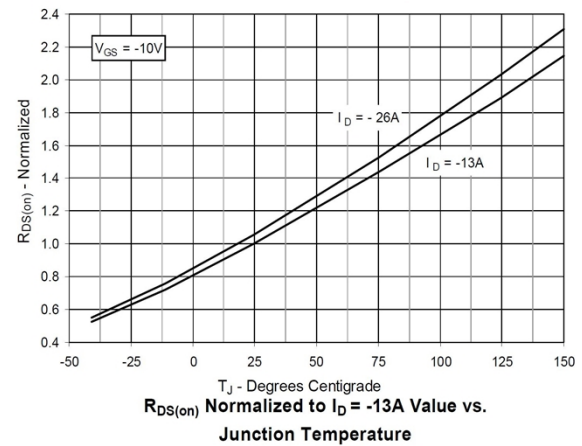
Output Characteristics @ $T_J = 25^\circ\text{C}$



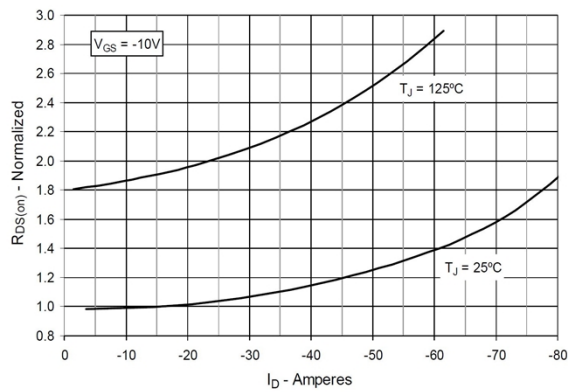
Extended Output Characteristics @ $T_J = 25^\circ\text{C}$



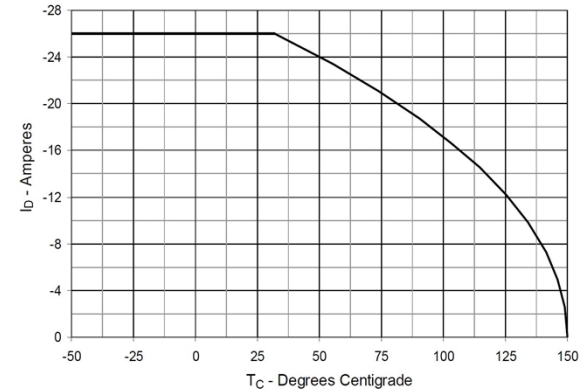
Output Characteristics @ $T_J = 125^\circ\text{C}$



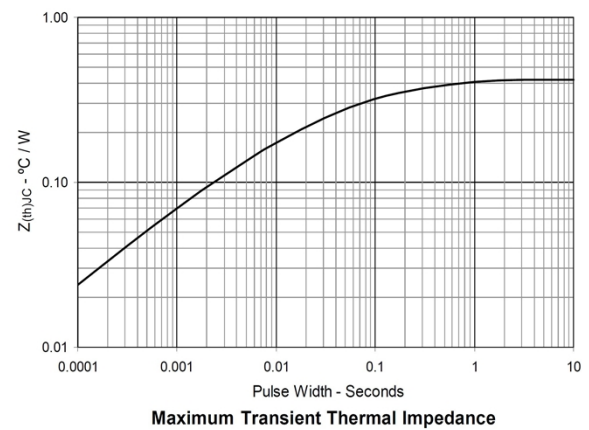
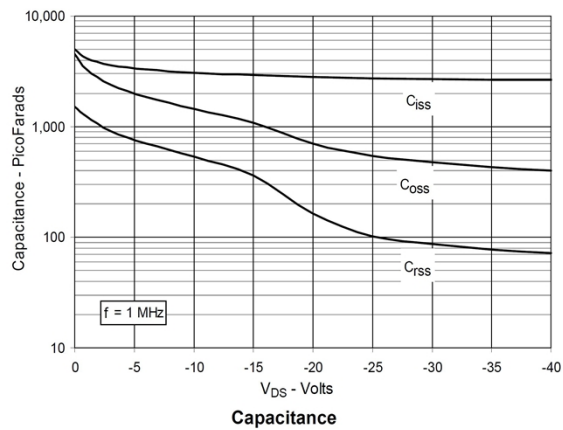
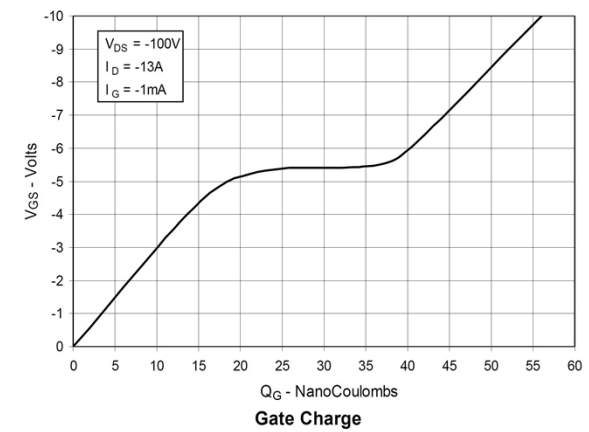
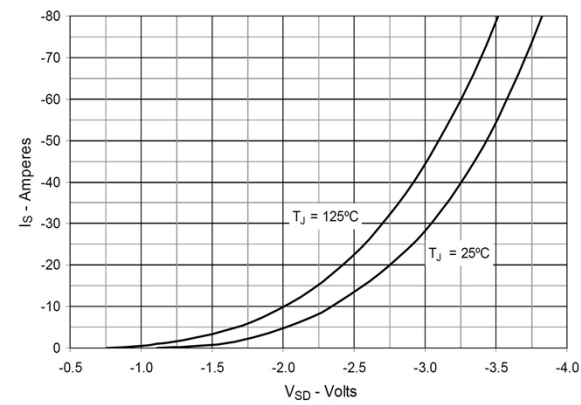
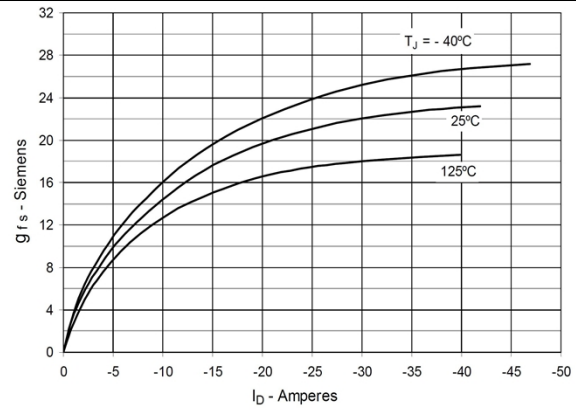
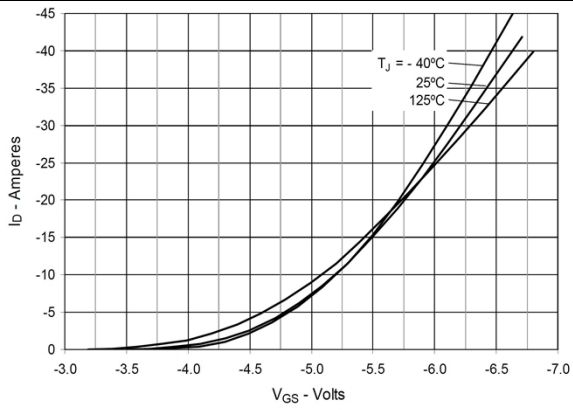
$R_{DS(on)}$ Normalized to $I_D = -13\text{A}$ Value vs. Junction Temperature

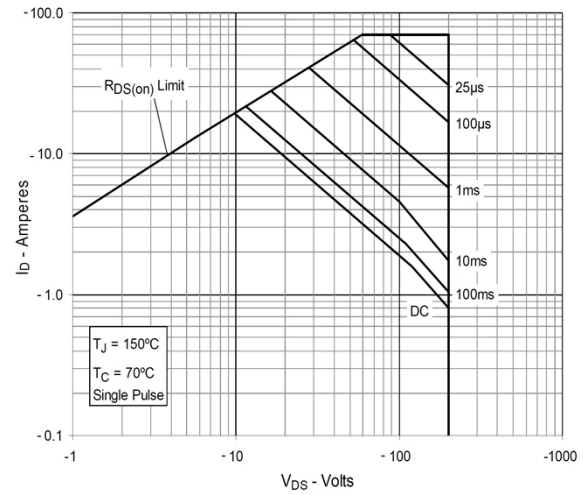
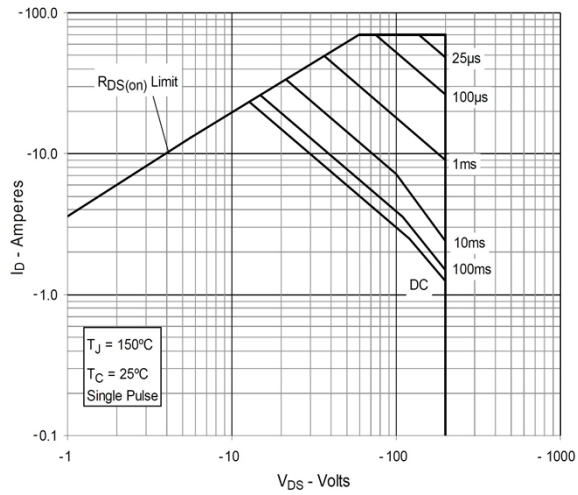


$R_{DS(on)}$ Normalized to $I_D = -13\text{A}$ Value vs. Drain Current

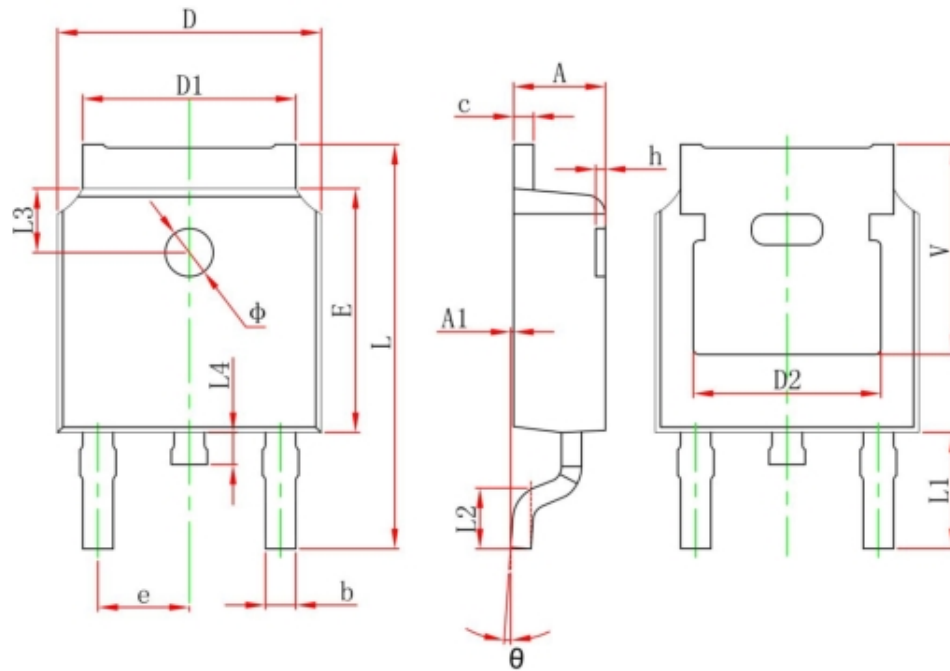


Maximum Drain Current vs. Case Temperature





TO-252 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 REF.		0.211 REF.	