



**Features**

- Typ.  $R_{DS(on)} = 20\text{ m}\Omega$
- Ultra Low Gate Charge (typ.  $Q_{G(tot)} = 220\text{ nC}$ )
- Low Effective Output Capacitance (typ.  $C_{oss} = 258\text{ pF}$ )
- 100% Avalanche Tested
- AEC-Q101 Qualified and PPAP Capable
- This Device is Halide Free and RoHS Compliant with exemption 7a, Pb-Free 2LI (on second level interconnection)

**Typical Applications**

- Automotive On Board Charger
- Automotive DC-DC Converter for EV/HEV

**MAXIMUM RATINGS** ( $T_J = 25^\circ\text{C}$  unless otherwise noted)

Parameter		Symbol	Value	Unit	
Drain-to-Source Voltage		$V_{DSS}$	1200	V	
Gate-to-Source Voltage		$V_{GS}$	-15/+25	V	
Recommended Operation Values of Gate-to-Source Voltage	$T_C < 175^\circ\text{C}$	$V_{GSop}$	-5/+20	V	
Continuous Drain Current (Note 2)	Steady State	$T_C = 25^\circ\text{C}$	$I_D$	98	A
Power Dissipation (Note 2)			$P_{DI}$		

	DSC	807	A
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to +175	$^\circ\text{C}$
Source Current (Body Diode)	$I_S$	46	A

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## THERMAL RESISTANCE MAXIMUM RATINGS

Parameter	Symbol	Max	Unit
Junction-to-Case – Steady State (Note 2)	R <sub>JC</sub>	0.32	°C/W
Junction-to-Ambient – Steady State (Notes 1, 2)	R <sub>JA</sub>	41	

## ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>OFF CHARACTERISTICS</b>						
Drain-to-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0 V, I <sub>D</sub> = 1 mA	1200			V
Drain-to-Source Breakdown Voltage Temperature Coefficient	V <sub>(BR)DSS</sub> /T <sub>J</sub>	I <sub>D</sub> = 1 mA, referenced to 25°C		0.5		V/°C
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>GS</sub> = 0 V, V <sub>DS</sub> = 1200 V	T <sub>J</sub> = 25°C		100	A
			T <sub>J</sub> = 175°C		1	mA
Gate-to-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = +25/-15 V, V <sub>DS</sub> = 0 V			±1	A

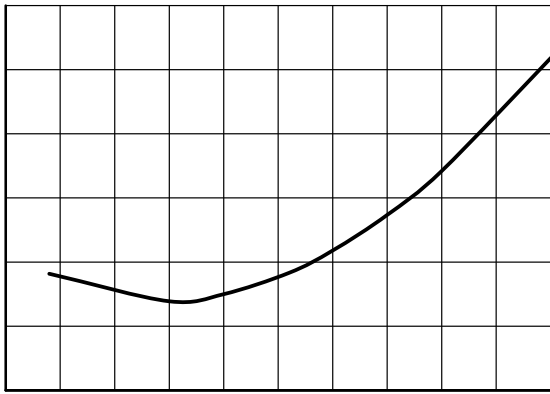
## ON CHARACTERISTICS (Note 3)

Gate Threshold Voltage	V <sub>GS(TH)</sub>	V <sub>GS</sub> = V <sub>DS</sub> , I <sub>D</sub> = 20 mA	1.8	2.7	4.3	V
Recommended Gate Voltage	V <sub>GOP</sub>		-5		+20	V
Drain-to-Source On Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = 20 V, I <sub>D</sub> = 60 A, T <sub>J</sub> = 25°C		20	28	mΩ
		V <sub>GS</sub> = 20 V, I <sub>D</sub> = 60 A, T <sub>J</sub> = 175°C		35	50	

Forward Transduc78 TmbF3 1 Tf.8295.28 466.413 .2948 .90707 r6.523 479.849 32.882 .90707 refD-.0033 Tc(to)Tj/TT3 14578 Tm0 Tc0 Tw(V)Tj 605.4

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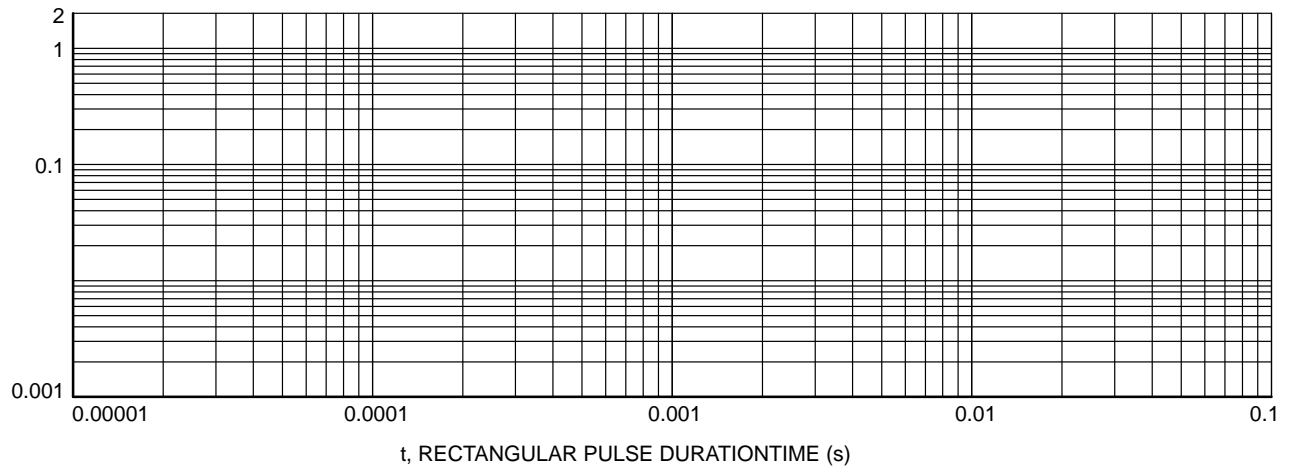
## TYPICAL CHARACTERISTICS






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## TYPICAL CHARACTERISTICS (continued)



**Figure 13. Junction-to-Case Transient Thermal Response Curve**

**D<sup>2</sup>PAK7 (TO-263-7L HV)**  
CASE 418BJ  
ISSUE B

DATE 16 AUG 2019

A

c2

H

C

**GENERIC  
MARKING DIAGRAM\***



XXXX = Specific Device Code  
A = Assembly Location  
Y = Year  
WW = Work Week  
G = Pb-Free Package

\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "•", may or may not be present. Some products may not follow the Generic Marking.

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