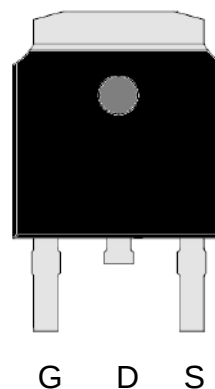


P-Channel Enhancement Mode Power MOSFET

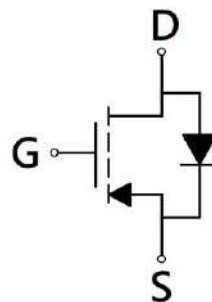
Features:

- Low Gate Charge
- Simple Drive Requirement
- Pb-free lead plating and halogen-free package

TO-252



BV_{DSS}	-200V
$I_D@V_{GS}=-10V, T_C=25^{\circ}C$	-4A
$R_{DS(on)}@V_{GS}=-10V, I_D=-2A$	0.80Ω (typ.)



G : Gate S : Source D : Drain

Ordering Information

Device	Package	Shipping
KJEJ0P20	TO-252 (Pb-free lead plating and halogen-free package)	2500 pcs / Tape & Reel

Absolute Maximum Ratings (T_c=25°C, unless otherwise noted)

Parameter	Symbol	Limits	Unit
Drain-Source Voltage	V _{DS}	-200	V
Gate-Source Voltage	V _{GS}	±30	
Continuous Drain Current @ T _c =25°C	I _D	-4	A
Continuous Drain Current @ T _c =100°C		-2.5	
Pulsed Drain Current *1	I _{DM}	-12	
Avalanche Current	I _{AS}	-4	mJ
Avalanche Energy @ L=2mH	E _{AS}	4	
Total Power Dissipation @T _c =25°C	P _d	38	W
Total Power Dissipation @T _c =100°C		15	
Operating Junction and Storage Temperature Range	T _j , T _{stg}	-55~+150	°C

Note : *1. Pulse width limited by maximum junction temperature

*2. Duty cycle ≤ 1%

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-case	R _{θJC}	3.3	°C/W
Thermal Resistance, Junction-to-ambient	R _{θJA}	110	

Electrical Characteristics (T_c=25°C, unless otherwise specified)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	-200	-	-	V	V _{GS} =0, I _D =-250μA
V _{GS(th)}	-2	-	-4		V _{DS} =V _{GS} , I _D =-250μA
I _{GSS}	-	-	±100	nA	V _{GS} =±30, V _{DS} =0
I _{DSS}	-	-	-1	μA	V _{DS} =-160V, V _{GS} =0
R _{DS(ON)} *1	-	0.80	1.0	Ω	V _{GS} =-10V, I _D =-2A
G _{FS} *1	-	3.6	-	S	V _{DS} =-5V, I _D =-2A
Dynamic					
Q _g *1, 2	-	14	-	nC	V _{DS} =-160V, I _D =-2A, V _{GS} =-10V
Q _{gs} *1, 2	-	3.8	-		
Q _{gd} *1, 2	-	4.6	-		
t _{d(ON)} *1, 2	-	16	-	ns	V _{DS} =-100V, I _D =-2A, V _{GS} =-10V, R _G =6Ω
t _r *1, 2	-	10	-		
t _{d(OFF)} *1, 2	-	32	-		
t _f *1, 2	-	10	-	pF	V _{DS} =-25V, V _{GS} =0V, f=1MHz
C _{iss}	-	777	-		
C _{oss}	-	38	-		
Cr _{ss}	-	17	-		

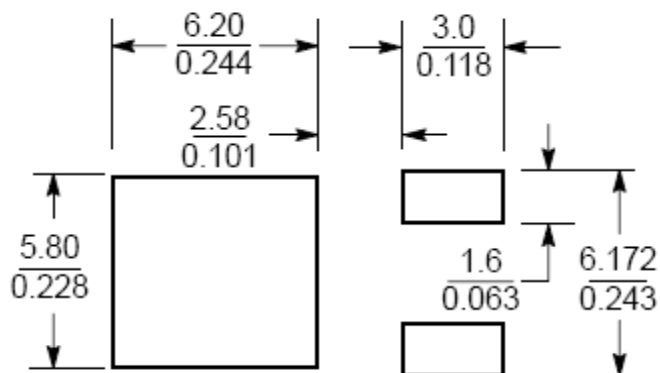
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Source-Drain Diode					
I_S *1	-	-	-4	A	
I_{SM} *3	-	-	-12		
V_{SD} *1	-	-0.85	-1.2	V	$I_F = -2A, V_{GS} = 0V$
trr	-	240	-	ns	$I_F = -2A, dI_F/dt = 100A/\mu s$
Qrr	-	320	-	nC	

Note : *1.Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$

*2.Independent of operating temperature

*3.Pulse width limited by maximum junction temperature.

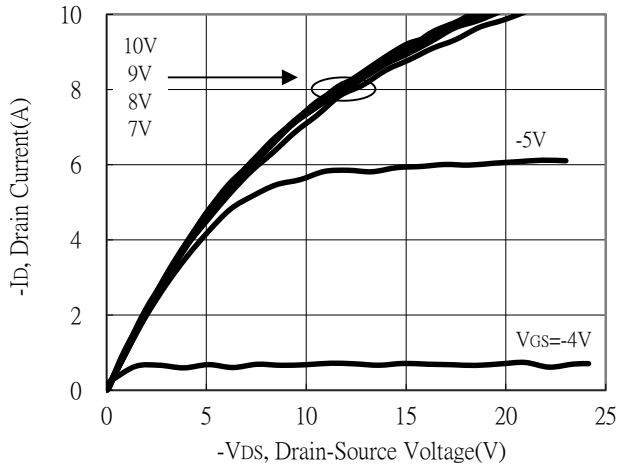
Recommended soldering footprint



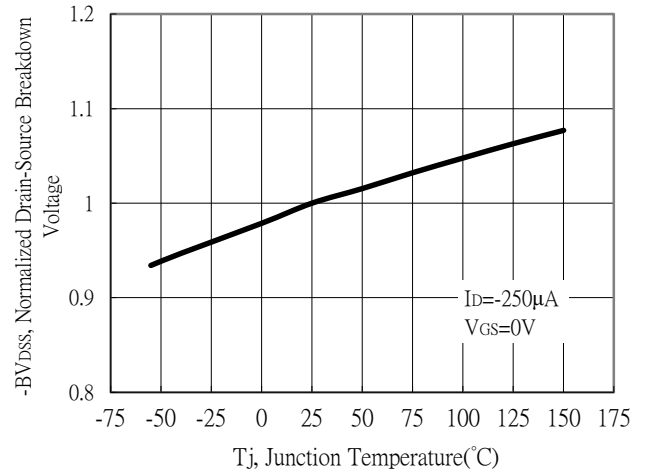
Unit ($\frac{mm}{inch}$)

Typical Characteristics

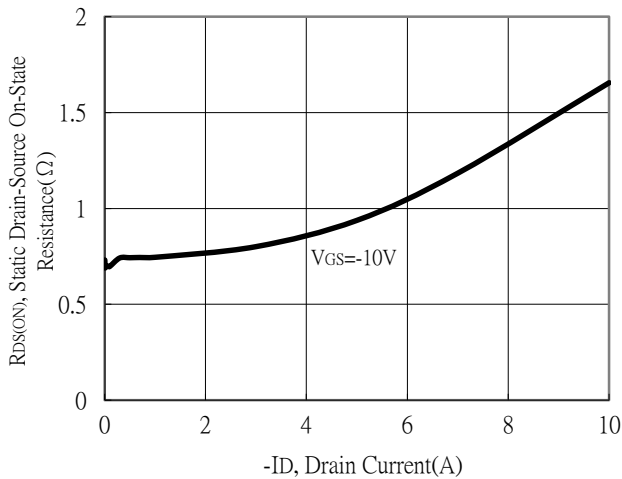
Typical Output Characteristics



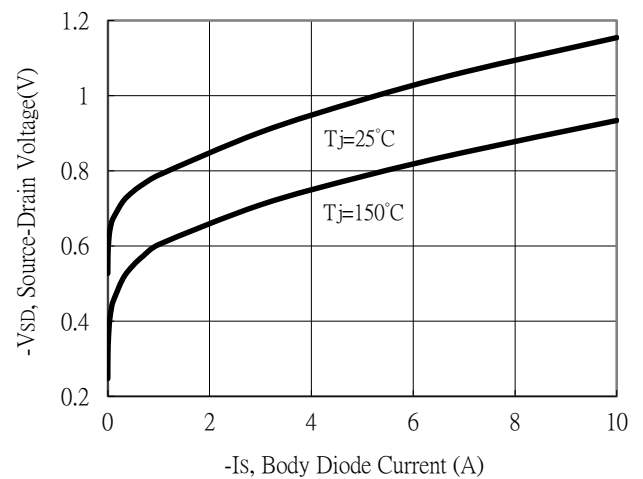
Breakdown Voltage vs Ambient Temperature



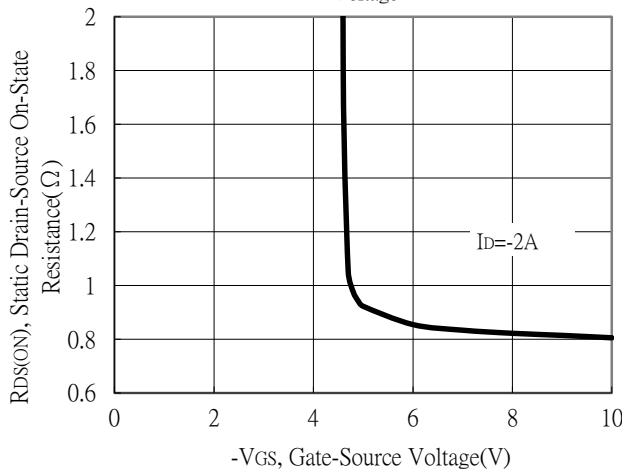
Static Drain-Source On-State resistance vs Drain Current



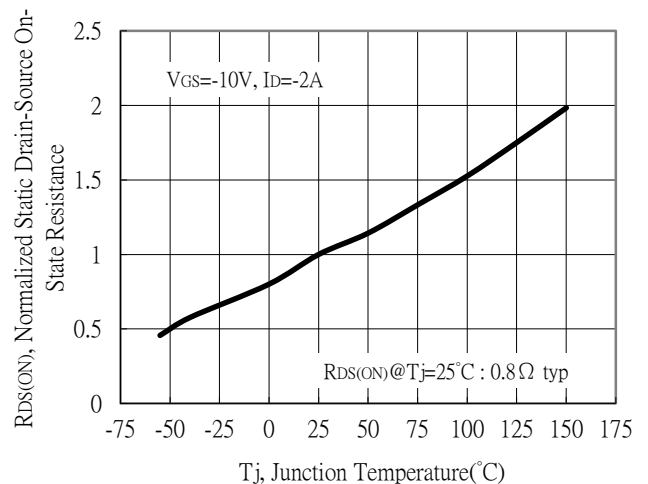
Body Diode Current vs Source-Drain Voltage



Static Drain-Source On-State Resistance vs Gate-Source Voltage

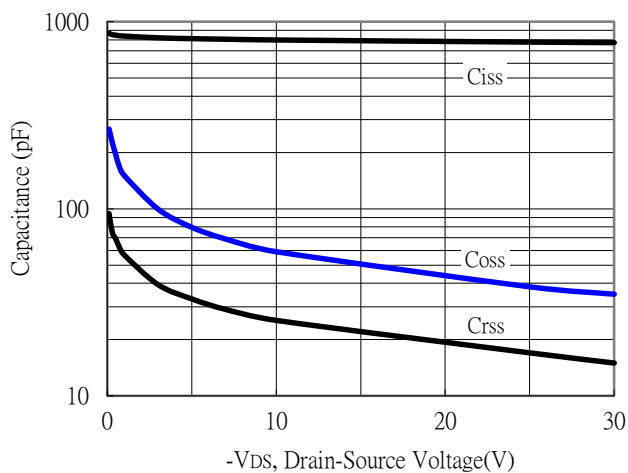


Drain-Source On-State Resistance vs Junction Temperature

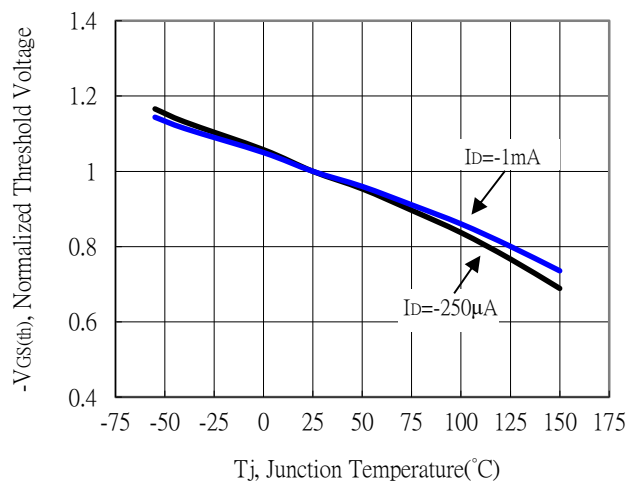


Typical Characteristics (Cont.)

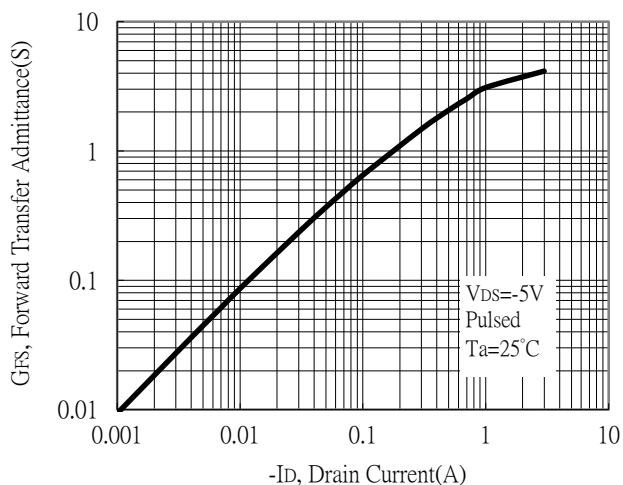
Capacitance vs Drain-to-Source Voltage



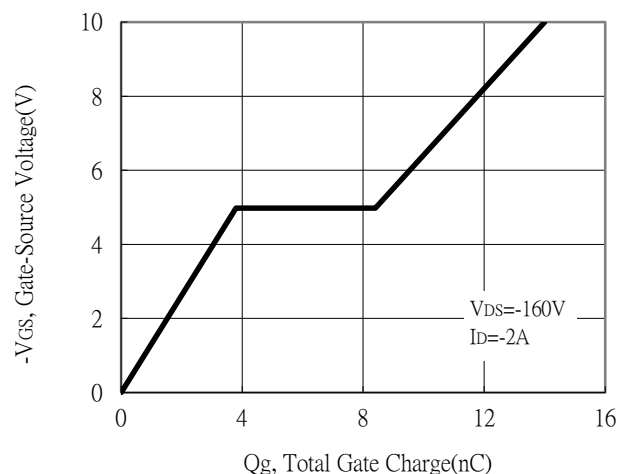
Threshold Voltage vs Junction Temperature



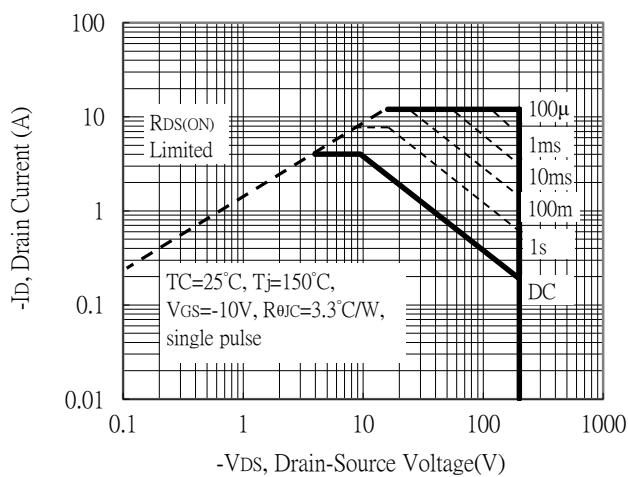
Forward Transfer Admittance vs Drain Current



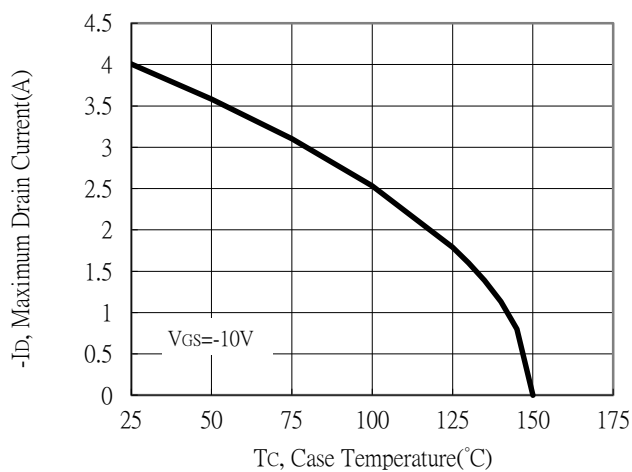
Gate Charge Characteristics



Maximum Safe Operating Area

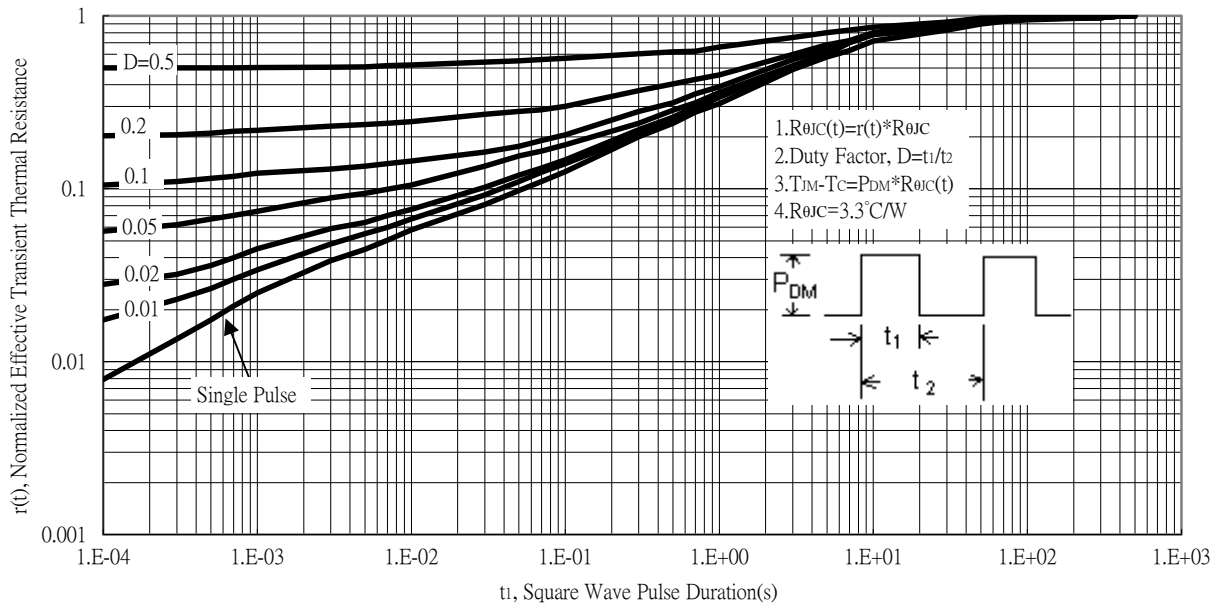


Maximum Drain Current vs Case Temperature

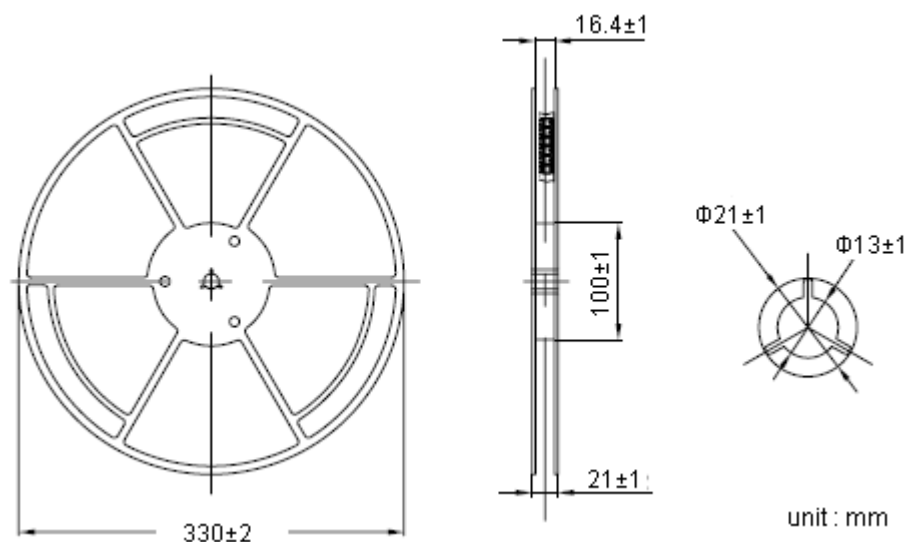


Typical Characteristics (Cont.)

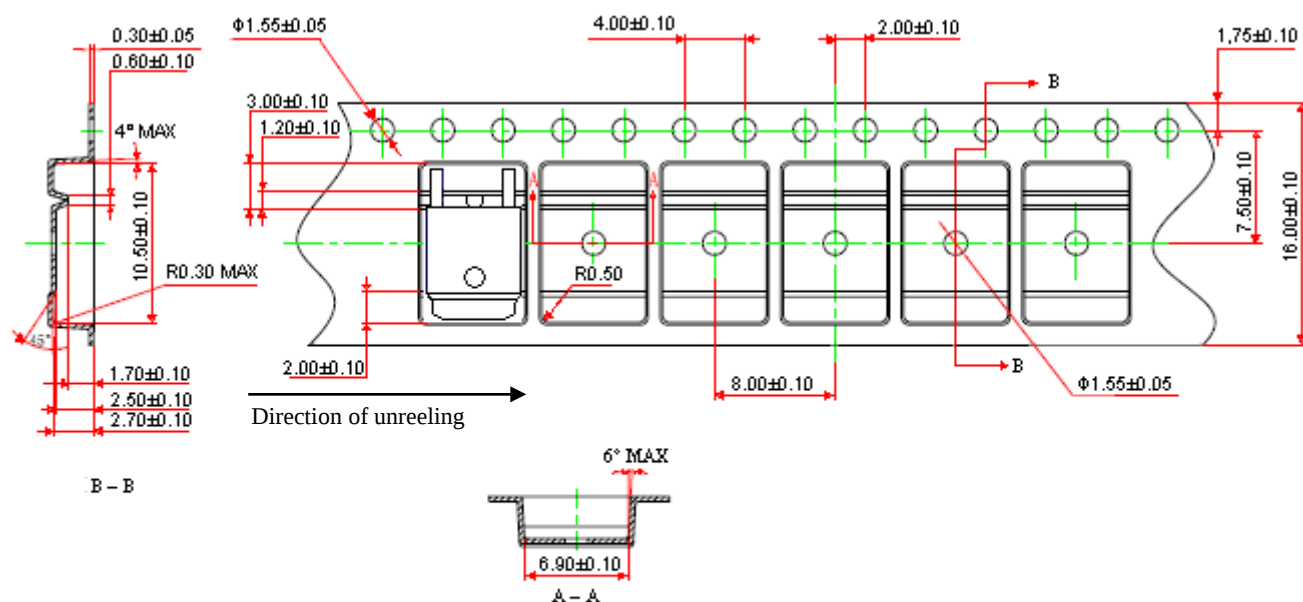
Transient Thermal Response Curves



Reel Dimension



Carrier Tape Dimension

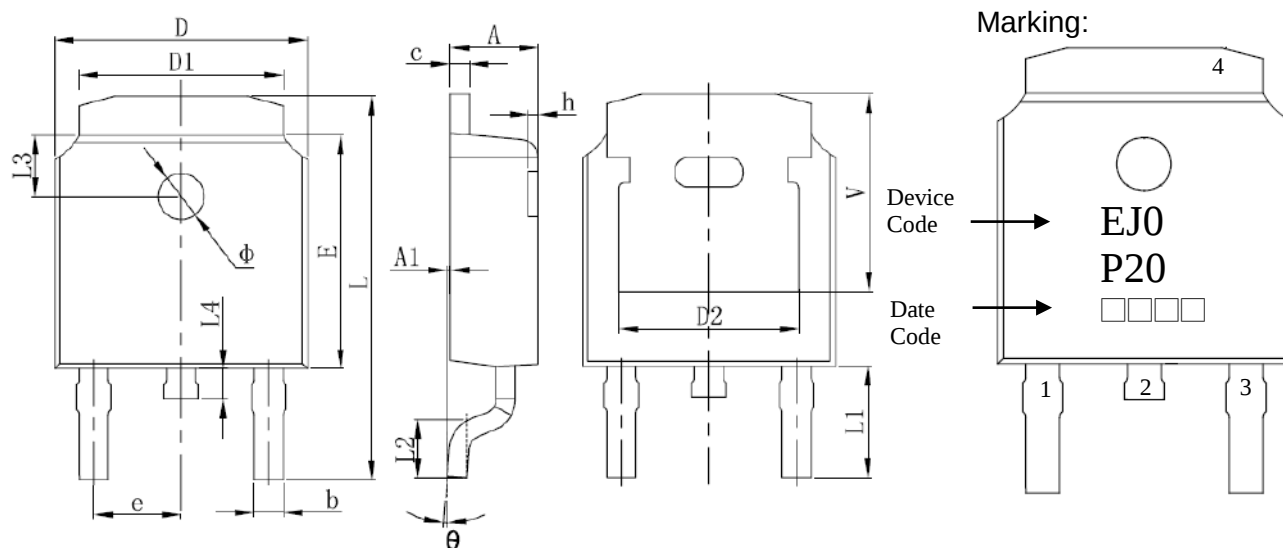


Notes:

1. 10 sprocket hole pitch cumulative tolerance ± 0.2 .
2. Camber not to exceed 1mm in 100mm.
3. Material: conductive black polystyrene, antistatic coated : $10^5 \Omega/\square \sim 10^{11} \Omega/\square$

unit : mm

TO-252 Dimension



Style: Pin 1.Gate 2.Drain 3.Source
 4.Drain

3-Lead TO-252 Plastic Surface Mount Package

Date Code(counting from left to right) :
 1st code: year code, the last digit of Christian year
 2nd code : month code, Jan→A, Feb→B, Mar→C, Apr→D
 May→E, Jun→F, Jul→G, Aug→H, Sep→J,
 Oct→K, Nov→L, Dec→M
 3rd and 4th codes : production serial number, 01~99

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.087	0.094	2.200	2.400	L	0.382	0.406	9.712	10.312
A1	0.000	0.005	0.000	0.127	L1	0.114	REF	2.900	REF
b	0.025	0.030	0.635	0.770	L2	0.055	0.067	1.400	1.700
c	0.018	0.023	0.460	0.580	L3	0.063	REF	1.600	REF
D	0.256	0.264	6.500	6.700	L4	0.024	0.039	0.600	1.000
D1	0.201	0.215	5.100	5.460	ϕ	0.043	0.051	1.100	1.300
D2	0.190	REF	4.830	REF	θ	0°	8°	0°	8°
E	0.236	0.244	6.000	6.200	h	0.000	0.012	0.000	0.300
e	0.086	0.094	2.186	2.386	V	0.207	REF	5.250	REF